Learner Readiness and L2 Production in Spanish: Processability Theory on Trial

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This study investigates interactions between learner readiness and instruction type as they affect stage development in second language (L2) learners of Spanish. Working from a Processability framework (Pienemann, 1998) and Johnston's (1995) proposed stages for Spanish, learner development was examined in terms of emergence of stage forms in oral L2 production. Three instruction types were administered to L2 Spanish learners categorized as ready or unready for personal a *and the subjunctive. These two forms were predicted by Johnston (1995) to belong to Stage 4 and Stage 7 in his hierarchy. Results indicate that learners produced a form for which Pienemann and Johnston would classify them as unready. In addition, full processing instruction brought about effects that were significantly different from explicit information and structured input. These results do not lend support to Processability Theory as presented by Pienemann (1998) and call into question the hierarchy for Spanish proposed by Johnston (1995).*

Palabras clave: *la teoría de la procesabilidad, la instrucción de proceso, el* input *estructurado, el subjuntivo* Learner Readiness and L2 Spanish: Processability Theory on Trial
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El presente estudio analiza las interacciones entre la preparación del aprendiz y el tipo de instrucción, mientras afectan el desarrollo de etapas en la adquisición del español como segunda lengua. Desde una perspectiva de procesabilidad (Pienemann, 1998) y considerando las etapas propuestas por Johnston (1995), se examina el desarrollo del aprendiz con respecto a la emergencia de formas en la producción oral de L2. Tres tipos de instrucción fueron administrados a los aprendices del español como segunda lengua, quienes fueron categorizados como "preparados " o "no preparados " para la a *personal y el subjuntivo. Según Johnston (1995), estas dos formas pertenecen a las etapas 4 y 7, respectivamente, en la jerarquía de procesabilidad. Los resultados indican que los aprendices produjeron una forma para la cual Pienemann y Johnston los clasificaría como "no listos ". Además, la instrucción de proceso resultó en efectos distintos de los efectos que trajo la información explícita y también distintos de los efectos del* input *estructurado. Estos resultados no dan apoyo a la "teoría de la procesabilidad", como se presenta en Pienemann (1998) y no afirman la jerarquía de etapas para el español propuesta por Johnston (1995).*

1. Learner Readiness and L2 Spanish: Processability Theory on Trail

Numerous second language (L2) studies have examined stages of acquisition and the effects of instruction type on learners' movement through developmental stages. A majority of this research has involved ESL and the development of WH question forms in particular. Motivation for the present study stems from a similar vein of inquiry but focuses on stage development in L2 Spanish learners. Here we investigate the interface between the individual learner variable of *readiness* and the treatment variable *instruction type* as they impact stage development in L2 Spanish learners. The present investigation is designed to determine whether readiness is a stronger predictor of L2 stage development than instruction type, and whether both ready and/or unready learners show development under any or all of the treatments administered. Two grammatical structures are introduced as test cases: the personal *a* object marker and the subjunctive mood.

Both the object marker *a* and the subjunctive present challenges to L2 learners of Spanish. Personal *a* (see Johnston, 1995; VanPatten & Cadiemo, 1993) and the subjunctive (see Collentine, 1998; Farley, 2001 a,b) are both considered late-acquired forms in terms of developmental stages and orders of acquisition. Of course, various theoretical frameworks are able to give an account for the delayed acquisition of these features, two of which are VanPatten's model of Input Processing as well as Pienemann's Processability framework. Both of these theoretical frameworks will be relevant to the present study in that the former motivates the instruction types investigated herein, whereas the latter is the framework under scrutiny. These two frameworks should not be seen as opposed to one another; rather, they provide complementary accounts as they address different aspects of SLA. Input Processing presents an account of why these forms may be difficult to process on their way *in* to the learner's developing system, while Processability Theory offers an explanation of why these structures are difficult to process on their way *out* during oral production.

1.1 Processability: Theory and Research

The existence of sequences of development in L2 learners' interlanguage production is well-documented in SLA research. In collecting longitudinal data of learners' oral production, researchers have found consistent and patterned orders in the emergence of L2 structures. A developmental sequence was first identified for the emergence of interrogatives in ESL learners (Adams, 1978; Dulay & Burt, 1973,1974; Huang, 1970; Wagner-Gough, 1975; Young, 1974). A sequence for both negation and relative clauses in ESL learners was also identified (Hyltenstam, 1987; Schumann, 1979; Stauble, 1981). Similarly, researchers of other L2s have observed natural sequences of development, most notably with German word order (Clahsen, 1980; Meisel, Clahsen, & Pienemann, 1981; Pienemann, 1985; Pienemann & Johnston, 1987), and with various structures in L2 Dutch, Swedish, Japanese and Spanish (e.g., Andersson, 1992; Doi & Yoshioka, 1990; Johnston, 1995; Souck, 1987).

Research evidence also suggests that instructional interventions do not alter this predictable progression through developmental stages. That is, learners in both naturalistic and classroom learning environments exhibit progress through the same stages, and in the same order, regardless of whether or not they are taught L2 forms from later stages (for review, see Larsen-Freeman & Long, 1991). The observation of this phenomenon has demanded a theoretical explanation. Processability Theory, first proposed in Pienemann (1998), is an attempt to account for observed acquisition orders and stages of development that are seemingly unaffected by instructional interventions.

Processability Theory is based on real-time production data and assumes that the learner has an unconscious apparatus for creating speech. According to Pienemann (1998), the process of language acquisition involves acquiring a series of processing procedures that are necessary to produce the target language. A learner cannot produce a particular L2 form until the procedures needed to produce that structure have been acquired. The primary objective of Processability Theory is "to determine the sequence in which procedural skills develop in the learner" (Pienemann, 1998:5). According to Pienemann, if the sequence of development of these devices is discovered, we can then predict which language structures will appear earlier and which ones will appear later in learner speech. Pienemann also purports that the acquisition of these procedures is the same for all language learners and that differences in performance are not attributable to individual differences in the production devices themselves.

Pienemann (1998) believes these production procedures to be uncontrolled (automatized) procedures, a notion to which both McLaughlin (1987) and Schmidt (1992) would lend support. However, Pienemann goes a step further in claiming that it is possible to identify five exact production procedures and their sequence of development. He proposes that although each procedure is acquired independently, there is a set order in which these five procedures are acquired based on issues of syntax and syntactical processing. The following five hierarchical procedures identified in Pienemann (1998) essentially form the backbone of Processability Theory: 1. word / lemma access, 2. category procedure, 3. phrasal procedure, 4. S-procedure, and 5. subordinate clause procedure. As a learner progresses through the hierarchy over time, they are increasingly more capable of doing longer-distance syntactic processing within a sentence.

The first procedure simply involves the access and production of words (or lemma). This is an obvious pre-requisite for lexical categorization (procedure 2) in which specific grammatical characteristics (person, number, gender, etc.) along with certain semantic information are associated with the lexical entry. If the head of a phrase is a word that already has grammatical and semantic information assigned to it, then the phrasal procedure (stage 3) is carried out resulting in agreement between the head (such as a noun, verb, or adjective) and its modifier(s). Then, the role of that phrase in a whole utterance can be assigned, and the phrase can be correctly inserted within a sentence structure. This assigning of phrasal function and the storing of sentential information occurs in the S-procedure (stage four). Finally, the subordinate clause procedure (stage

five) involves an exchange of grammatical and semantic information between the subordinate and main clause. Table 1 summarizes the hierarchy of processing procedures and the resulting target language structures.

Readiness is a construct within the Pienemann (1998) framework that refers to an L2 learner's state relative to features higher in the hierarchy of processability. Readiness for a particular structure means that a learner already possesses the processing procedures needed to produce L2 features that correspond to all previous stages. Pienemann claims that instruction is ineffective in altering acquisition orders and stages of development (see Pienemann, 1984, 1987, 1989). His Teachability Hypothesis predicts that stages cannot be skipped via formal instruction because of the implicational relationship found in his hierarchy. In other words, processing at any given stage in the hierarchy implies that the procedures for all preceding stages have been acquired. For example, in order for a learner to process (produce) features at stage 3, the processing procedures necessary to produce features of all previous stages (1 and 2) must already be in place. For this reason, instruction is beneficial only if it seeks to introduce next stage forms. Simply put, structures that are teachable are those for which the learner is ready.

SLA researchers have examined the relative effects of readiness and unreadiness, and the studies have thus far yielded contradictory results. For example, Mackey (1995) and Mackey and Philp (1998) found that ready learners benefited more than unready learners from exposure to native speakers. However, Lightbown and Spada (1999) found that ESL learners at different stages did not improve at significantly different rates in their use of questions on an oral production task.

Pienemann's own research has supported his predictions. Pienemann (1984,1989) revealed two main findings to support the claim that developmental sequences are impervious to instruction. First, children who began at stage 3 progressed to the next stage (performing inversions) by the end of two weeks of instruction. In contrast, children who started at stage 2 remained at that stage after the treatment. The study concluded that instruction directed at ready learners can accelerate the natural acquisition process, and that instruction should always target next-stage linguistic features. Other researchers have investigated the effects of instruction on developmental sequences, and their findings also support the immutability of acquisition orders (e.g., Brindley, 1991; Ellis, 1989; Meisel *et al*., 1981; Pavesi, 1986; Schumann, 1979). Nonetheless, there is evidence to suggest that even though instruction does not alter the order of developmental stages, it can affect the *rate* at which learners pass through stages (Lightbown & Spada, 1999; Spada & Lightbown, 1993; White, 1991; Pienemann, 1984,1989).

1.2 Processability and L2 Spanish

Using Pienemann's theoretical framework (from Pienemann, 1984,1989) together with observational data from learners of L2 Spanish, Johnston (1995) constructed *seven* stages of acquisition and identified specific Spanish structures that he believes correspond to

each stage (see Table 2). In general, Johnston's stages for Spanish only roughly mirror the hierarchical ordering that Pienemann's (1998) proposed. For instance, although Johnston's stages one and two correspond perfectly with the first two stages in Pienemann's hierarchy, his stages three and four predict that some procedures will be acquired in an order slightly different from that proposed by Pienemann. For example, the phrasal procedure is level three in Pienemann's framework, but Johnston places phrasal agreement in Spanish at stage four. In addition, while adverb fronting is considered by Pienemann to be a simple S-procedure (early level four), it appears in Johnston's stage three. It is important to note, however that Pienemann and Johnston would agree (at least, relatively speaking) concerning the ability to transfer information across a clausal boundary, which corresponds to the final stage (stage 5 for Pienemann as shown in Table 1 and stage 7 for Johnston as shown in Table 2) in both analyses. Hence, Pienemann and Johnston would both predict the Spanish subjunctive to be produced very late by L2 learners.

The personal *a* marker and the subjunctive mood in Spanish qualify as objects of study for research on readiness due to their relative positions within Johnston's processability hierarchy. Many object marker constructions in Spanish corresponds to Johnston's stage four, the first stage involving category identification. However, personal *a* constructions that involve object fronting as in *A Roberto lo llamó Jorge* -George called Robert- qualify as stage five since there is a transfer of information across phrasal boundaries. For low-mid intermediate level learners, these object marker constructions likely register as next-stage. In contrast, the Spanish subjunctive (a final-stage form) is a structure for which low-mid intermediate learners are not ready. Targeting a stage significantly beyond learners' next stage allows for an examination of whether those who are unready for a form can benefit from the instruction types in this study. Finally, these forms are worthy of investigation in that the potential for LI transfer is nonexistent. Neither form has an English equivalent that might lead subjects to produce them by default.

1.3 Motivation for the Present Study

At present, Silver (1999) is the only study that has investigated the *interface* between instruction type and ESL learners' stages of development with regard to question formation. However, the study does not directly address the issue of readiness, since the treatments (an input processing approach, a "bare bones" output approach, and a negotiation-interaction approach) introduced numerous types of question formation and were not focused exclusively on next-stage features. In addition, it appears that there may have been a lack of balance across conditions with respect to subjects' initial stage. In short, the results of Silver's (1999) ESL study yielded no decisive conclusions regarding the interaction between readiness and instruction type.

The present study is unique in that it is the first to truly examine the interface between instruction and stages of development while simultaneously introducing instruc-

tion type as a variable. If, as the relatively small body of existing research suggests, stages of development are immutable, then instruction type should not bring about any significant difference. That is, the learners who are ready for the forms taught should show development, while the unready learners should not, regardless of the instruction type they receive. However, if a group of unready learners demonstrates evidence of stage development after treatment, this will suggest that instruction type may be an influencing factor in stage development.

In this study, three different instruction types were examined: full processing instruction (structured input + explicit information), structured input only, and explicit information only. Processing instruction (PI) was selected for the present study primarily because it focuses practice on processes within SLA that occur prior to intake and restructuring of learners' developing systems. Because the present study assesses learners' oral production, many output-focused treatments might play a skill-building role rather than actually altering learners' developing systems. In using processing instruction, any oral performance gains can be attributed to some degree of change in underlying knowledge. In addition, processing instruction can be easily divided into explicit and non-explicit components. Other studies investigating the variable instruction type (including those related to learner readiness and stages of development) have not been precise in isolating such instructional variables. Processing instruction, which is focused entirely on the provision of L2 input, deliberately excludes confounding factors such as feedback, negotiation, and incidental input.

2. Hypotheses

For the purpose of this study, it was hypothesized that subjects who were ready for a target form would demonstrate stage development regardless of instruction type. This prediction was based partially on research regarding readiness (Pienemann, 1984,1987) in which learners who were developmentally ready for a target form benefited from focused instruction. However, this hypothesis was also based on recent PI studies indicating that PI brings about beneficial effects for L2 learners' written production of the object marker *a* (VanPatten & Oikennon, 1996) and the subjunctive (Farley, 2001a, 2003a). In addition, structured input alone (with no explicit information) was sufficient to bring about improvement for these structures (VanPatten & Oikennon, 1996; Farley, 2003b). Also contributing to this hypothesis was the fact that VanPatten and Sanz (1995) found that PI yielded benefits for L2 learners' *oral* production.

It was also hypothesized that those who were unready for a target form would still demonstrate stage development if they received processing instruction (PI) or structured input (SI). Obviously, the results of Pienemann (1984,1987), Mackey (1995), and Mackey and Philp (1998) contradict this hypothesis in that unready learners did not improve after instruction. However, PI was not a treatment in any of those studies, and the results of Farley (2001 a,b; 2003b) demonstrate consistent improvement on interpretation and

production tasks for intermediate-level learners who received PI or SI. Of course, learners in the Farley studies were not formally classified as ready or unready for the subjunctive using oral tasks and a Processability hierarchy. However, the researchers surmise that most, if not all, of the intermediate-level participants in Farley's studies would have been classified as unready based on the Johnston (1995) hierarchy. In summary, the overall prediction was that readiness would not be a stronger predictor of development than instruction type.

The present study also investigated whether any of the instruction types (processing instruction, structured input, or explicit information) would bring about a significantly different effect for ready and/or unready learners. Our hypothesis regarding instruction types stems from two previous PI studies: VanPatten and Oikennon (1996) and Farley (2003b). Results of the former showed no difference between the effects of PI and SI for object pronouns (with use of personal *a),* while the Farley study indicated that PI brought about more improvement than SI on tasks involving the Spanish subjunctive. Naturally, our hypothesis mirrored these studies — we predicted no significant difference between PI and SI for the object marker *a,* and a significant difference between PI and SI for the subjunctive. Finally, consistent with VanPatten and Oikennon (1996), we hypothesized that El alone would not bring about any improvement on either structure.

3. Experimental Design

3.1 Participants

The participants were volunteers enrolled in intermediate Spanish courses at a prominent Midwestern university in the United States. Prior to the study, participants received no formal instruction on personal *a* or the subjunctive during the semester of the study. A language background questionnaire gathered specific information about participants regarding their contact with other languages and exposure to Spanish outside of coursework. Participants whose LI was not English or who rated themselves as proficient speakers of another language were eliminated from the data pool. In addition, subjects who produced forms corresponding to Johnston's (1995) Stage 7 during the oral pretest were also eliminated. The final data pool consisted of twenty-nine participants who were randomly assigned to one of four treatments:

- Explicit information (El) about the target structures
- Structured input (SI) activities
- Processing Instruction (El + SI= PI)
- No treatment (Control)

3.2 Treatment

The treatment materials for personal «a» were adapted from VanPatten and Cadiemo (1993), while the materials for the subjunctive were adapted from Farley (2001b). Sample SI activity items for both L2 Spanish structures are provided in Appendix B. In each referential activity, multiple-choice items were form-based and required learners to select the correct answer. In each affective activity, responses were opinion-based, and items required learners to express their feelings or beliefs. After each referential activity, learners were informed of the correct answers. It is important to note that students did not receive any explanation as to *why* certain answers were correct. Finally, learners never produced any of the target forms during any portion of the instruction; they only selected from utterances already provided.

The PI treatment for the object marker *a* kept in mind Principles 2 and 3 as introduced by VanPatten (1996). Principle 2 states that only when attentional resources are not overburdened will an L2 learner begin to process less meaningful or semantically empty forms. The object marker *a* is acquired later than some features simply because, in most cases, attending to and processing *a* is not indispensable for utterance comprehension. That is, learners can easily overlook personal *a* in most contexts and still successfully obtain the meaning. VanPatten's Principle 3 states that learners automatically assign the role of subject to the first noun they encounter in a sentence unless other features such as lexical semantics or event probabilities make a given interpretation unlikely. When sentences containing personal *a* appear in canonical word order (which is most often the case), a learner is unlikely to notice the marker because the first noun strategy will have already led them to a correct interpretation of the utterance. Hence, personal *a* is of low communicative value, since subject and object roles can many times be assigned correctly without noticing or processing that marker. The instructional materials in the present study purposely included short SI activity items containing familiar vocabulary and structures to avoid the potential depletion of attentional resources described in P2. In addition, SI activity items included many tokens of non-canonical word order to avoid the negative influence of the P3 first noun strategy. Overall, the researchers adhered to VanPatten's guideline for structuring input: *Keep the learner's processing strategies in mind.*

As with the object marker materials, the PI treatment for the subjunctive consisted of explicit information, four aural structured input activities, and six written structured input activities. There were two aural activities and three written activities administered on the day of instruction. For the subjunctive activities, the learners' preference for processing utterance-initial forms (P4a) described in VanPatten (1996) was kept in mind. Hence, the matrix clause was divided from the subordinate clause whenever possible to take advantage of primacy effects that cause an utterance-initial form to be processed more easily than an utterance-medial form. With the referential activities, learners heard or read a subordinate clause and then had to select the correct matrix clauses from

the two provided (one of uncertainty and one of affirmation). Therefore, learners were not able to rely on the lexical items (subjunctive triggers) to determine whether or not doubt was being expressed. Instead, they were pushed to attend to the subordinate verb forms themselves to determine whether or not doubt was being expressed and then select the only appropriate matrix trigger. This structuring of each activity was a deliberate attempt to alter the strategy described by VanPatten (1996) in Principle 1(b): Learners prefer processing lexical items to grammatical items (e.g., morphological markings) for semantic information. Finally, in each activity, meaning was kept in focus and only one form (3rd person singular) was introduced.

The explicit information for personal "a" discussed the role of the marker in identifying the object of an utterance. The El and PI groups were reminded of the roles of subject and object in a sentence and told that the tendency of language learners is to automatically interpret the first noun or pronoun they see in a sentence as the subject and any subsequent nouns or pronouns as objects. They were cautioned that Spanish allows a variety of word orders, so the first noun in an utterance is not always the subject. Object pronouns and personal *a* were also cited as more reliable cues than word order for distinguishing who did what to whom.

The El for the subjunctive presented sample subjunctive forms, its location in a complex utterance, and its meaning and use. The El also warned that learners often fail to notice and process the subjunctive form when they are listening or reading due to its redundancy. That is, the uncertainty expressed in the matrix clause is simply reiterated by the subordinate subjunctive, making the latter unnecessary to process. As with the SI activities themselves, the El about the subjunctive was limited to its use in subordinate clauses after expressions of uncertainty. All of the El was written in English with examples provided in Spanish. The instruction for each structure occurred during one 50-minute session. For a more detailed discussion of PI for these structures, the reader is invited to consult VanPatten and Cadiemo (1993), Farley (2001a), and Farley (2002) in addition to the sample activity items in Appendix B of this study. Table 2 presents a visual representation of the design of the study with regard to tasks carried out in each session.

3.3 Assessment

Two means of assessment were included in the present study. The first was a grammaticality judgment test (GJT) designed to assess participants' underlying knowledge of the target structures. Participants read utterances in Spanish and responded by marking (a) possible, (b) not possible, or (c) I don't know. In addition, participants corrected any utterances that they had designated as "not possible." Written corrections enabled the researchers to award credit to "not possible" responses only when these were marked as such for the appropriate reason. The GJT instruction line and three sample items are provided in Appendix A. For the pretest, both target forms *(a* and subjunctive) were included on the GJT, along with distracter items (such as # 2 in Appendix A). For each

immediate posttest, the GJT included only test items for the L2 form just presented and distracter items unrelated to mood selection and object markers.

The production measure used for both testing phases of the experiment was a picture description task (PDT). This task was conducted one-on-one with one of the researchers and was audio recorded. The first recorded session was analyzed to determine each of the twenty-nine learner's beginning stage of development. This beginning stage was then used to classify subjects as either ready or unready for each of the two Spanish forms that would be presented via the treatments. The PDT was designed to elicit production of the object marker *a* and the subjunctive by presenting contexts requiring these features. However, the PDT also allowed participants to produce a variety of other structures, providing a corpus of production data useful in determining each learner's initial stage. The PDT was uniquely designed for the two different structures in focus; in both designs, participants described eighteen independent pictures. Learners were given a vocabulary sheet to review before beginning each PDT, and they were permitted to refer to it during PDT. The pretest PDT for both L2 structures was administered as one oral task with two parts, whereas a posttest PDT was administered separately for each structure immediately following each corresponding treatment.

The PDT for personal *a* instructed learners to describe each scene in two to three sentences, focusing on the action taking place. The scenes depicted involved both animate and inanimate objects in order to introduce obligatory and non-obligatory *a* contexts; distracter pictures were also included. For instance, participants might see a cat biting his owner (obligatory context), or a picture of a girl playing the piano (non-obligatory context), or people walking around in a downtown area (distracter item). The PDT for the subjunctive presented learners with eighteen pictures and two phrases printed above each. Participants were instructed to express an opinion about the illustrated scene by selecting one of the two matrix clauses and completing each utterance. This PDT presented pictures and phrases designed to elicit subjunctive or non-subjunctive (indicative) tokens, and distracter pictures and phrases were also included. For example, participants would see an image of a dog playing the guitar along with the phrases *Es cierto que...* (It is true that...) and *Es dudoso que...* (It is doubtful that...) provided above the picture. Matrix clauses were balanced across the pictures for both testing phases of the subjunctive PDT. The distracter items for the subjunctive PDT included depictions of routine activities. For example, participants saw a person in the kitchen cooking eggs along with the expressions: *Es difícil...* (It is difficult...) and *No es difícil...* (It is not difficult...). Distracter items consistently elicited the use of infinitive phrases such as *cocinar* (to cook) or *freir huevos* (to fry eggs).

3.4 Scoring

Subjects' responses to target items on the GJT were scored as correct or incorrect by comparing them to native speaker judgments of the same sentences. A ratio of correct

responses over the total number of responses was calculated to determine each participant's score on the GJT. The PDT was used to determine the initial stage of each learner and development after treatment. Both an emergence score and an accuracy score were calculated for each testing session. The emergence measure served as the indicator of whether stage development had occurred and whether readiness was a stronger predictor of development than instruction type. The accuracy measure was used to determine whether any instructional type brought about effects that were significantly different from the other treatments. Because the number of target forms produced by each subject on the PDT varied, accuracy was scored using a ratio of correct uses to obligatory contexts. For example, if a learner produced eight utterances that required personal *a* but only produced the marker five times, an accuracy ratio of 5/8 was attributed to that learner.

4. Results

Table 4 presents the frequencies of development for each treatment group on each structure. Almost all of the 29 learners were categorized as ready for the object marker *a,* yet less than half of those participants showed development on the structure. In contrast, none of the participants in this study were categorized as ready for the subjunctive, yet all learners who received PI showed development and nearly half of the other learners (excluding the Control group) demonstrated subjunctive development.

A logistical regression (generalized linear mixed model) was used on the GJT and PDT data in order to determine which contrasts were significant. For the GJT, a significant effect *(p* < .0033), negative in nature, was found for learner readiness (subjunctive data vs. personal *a* data). No effect was found for instruction type *ip* = .6452). Finally, there was no significant interaction found between readiness (subjunctive data vs. personal *a* data) and instruction type.

For emergence on the PDT, the results yielded no significant effect for learner readiness (p=.1400). There was a significant effect for Instruction Type with El, SI, and PI having significantly higher scores than the Control group (a = .05). PI brought about significantly more improvement than either El or SI, while there was no statistical difference found between El and SI. A summary of the emergence results for instruction type on the PDT is provided in Table 5.

For accuracy on the PDT, both readiness and instruction had a significant effect on accuracy. Ready learners were found to have been *less* accurate than unready learners. In addition, all three treatments brought about significantly different results than the Control group (a = .05) with no significant difference between any instruction types. The *p* values on the PDT for each instruction type comparison are provided in Table 6, while a summary of all results is given in Figure 1.

5. Discussion

This study is the first to examine the interface between instruction and stages of development while simultaneously introducing instruction type as a variable. If stages of development were immutable, then treatment type would not have yielded any significant difference. The learners who were ready for the forms taught would have shown development, while the unready learners would not have shown development, regardless of the instruction type they received. However, this was not found to be the case. Here, even unready learners demonstrated evidence of stage development after treatment. This suggests that instruction type does have an impact on stage development and that this impact is greater than the impact of readiness.

The hypothesis that ready learners would demonstrate stage development, regardless of instruction type, is supported by the results of the present study. Our results are consistent with Pienemann (1984,1987) in that ready learners benefited from focused instruction. The results are also consistent with VanPatten and Oikennon (1996) and Farley (2001a, 2003a) in that PI in particular brought about improvement with these structures. However, unlike those studies but like VanPatten and Sanz (1995), the assessment here was also oral in nature. Hence, this study adds to the body of literature showing that PI yields benefits for L2 learners oral production. Finally, these results are consistent with VanPatten and Oikennon (1996) and Farley (2003b) in that structured input alone (without El) brought about improvement on these structures, with the improvement being oral (PDT) in nature as well as relating to learners' underlying knowledge (GJT).

The hypothesis that unready learners would demonstrate stage development if they received processing instruction (PI) or structured input (SI) was also supported by the results of this study. Note that this result is not consistent with Pienemann (1984,1997), Mackey (1995), or Mackey and Philp (1998). However, PI was not a variable in those studies. This result is not unlike the results of Farley (2001a, b; 2003b), although learners in Farley's studies were not officially classified as ready or unready nor were they assessed in the oral mode. However, we suggest that most of Farley's intermediate learners would have been classified as unready for the subjunctive, and yet they improved on written interpretation and production tasks. To summarize, these results support the hypothesis that readiness is not a stronger predictor of development than instruction type.

Our study also examined whether instruction type (PI, SI, and El) is a significant variable. The results of VanPatten and Oikennon (1996) yielded no difference between PI and SI for object pronouns (with use of personal *a*), while Farley (2003b) indicated that PI brought about more improvement than SI on tasks involving the Spanish subjunctive. Our hypothesis regarding instruction type mirrored these studies, yet our hypothesis was only partially supported by the present results. In this study, a significant difference between PI and SI was found for both the object marker *a* and the subjunctive. Finally, consistent with VanPatten and Oikennon (1996), it was hypothesized that El alone would

not bring about improvement for either form, but this too was not supported by our findings. Learners showed development for both structures after receiving El alone.

Overall, these results present a problem for the Processability framework as articulated by Pienemann (1998) and Johnston (1995). The ready learners (object marker *a* data) should have shown more development than the unready learners (subjunctive data). This was not the case in the present study; in fact, the opposite was found. L2 learners of Spanish were able to produce a form after instruction for which they were theoretically (at least from a Processability framework) unready. Not only was this general effect for instruction found, but also all three treatments resulted in development for both forms. In some sense, this result in itself carries the weight of three separate studies in that some previously published studies have solely examined the interaction between *one* instruction type and learner readiness. The fact that two separate components of processing instruction (El and SI) independently brought about positive effects for unready learners and that both components together (full PI) yielded even greater effects adds to the already significant body of SLA literature attesting to the efficacy of PI.

Several methodological concerns might be raised about the design of the present study. First, one can always argue that there may have been differences in the instructional materials for the two grammatical structures. One might contend, for example, that the subjunctive materials were somehow more focused than the personal *a* materials. However, learners received the same number of tokens for each structure, and these activity items were taken from previous research materials on PI (namely, VanPatten and Cadiemo, 1995; and Farley, 2001b). In fact, the object marker materials from VanPatten and Cadiemo (1993) were significantly altered in order to place a greater focus on personal a, rather than the focus being more on the use of object pronouns. It is important to note that Johnston's hierarchy (see Johnston, 1995) implies that learners of the type in the present study are much more likely to be ready for personal *a* than the subjunctive. Probably not even Johnston would argue that slight yet necessary differences in instructional materials would obviate the entire Processability hierarchy in such a way as to yield the present results.

Second, one might argue that the subjunctive is taught extensively in beginning and/or low-intermediate Spanish courses while the object marker *a* is not, and that past instruction could be causing the difference. However, we return to the simple fact that learners in the present study were not ready at the pretest stage for the subjunctive according to the Processability framework. Prior instruction on the subjunctive obviously did not result in any ability to produce the structure at that point, and if one contends that previous exposure is an intervening variable, then that idea alone suggests that Pienemann's framework is not as universal as he claims. In other words, these learners were, without question, unready. If prior instruction was an intervening variable, it did not in any way affect their state of unreadiness. The point is that instruction (of at least three types) was found to make a difference and bring about development in unready learners. It may be that prior exposure helped in some way; if so, this would only mean

that instruction + prior exposure is able to bring about development in unready learners, a result that still undermines the Processability framework and the notion of readiness. Having said this, it should be noted that *none* of the participants produced a single subjunctive form at the pretest stage; prior exposure (if any) did not appear to be a significant, intervening variable. For this reason, we hold that it was the present treatments alone that brought about the effects evidenced in this study.

Finally, one might argue that monitoring was occurring during the PDT. That is, because the PDT posttest for each form was administered shortly after the corresponding treatment, learners may have been able to monitor their speech during the description task. This is a valid argument, and only the implementation of a delayed posttest might make the results more conclusive. Time constraints did not permit a delayed posttest in this instance, but this is certainly a suggestion for future research on L2 learner readiness. Also, an additional oral task that is less controlled in nature than the PDT might also serve to negate the potential argument that participants monitored. At the same time, however, a less controlled task might yield fewer tokens.

6. Conclusions

The present study has examined the interface between individual learner readiness and instruction type as they impact L2 stage development in learners of Spanish. Utilizing a Processability perspective (Pienemann, 1998) and Johnston's (1995) stages for Spanish, L2 development was examined in terms of emergence of forms in oral production. The results clearly indicate that participants acquired (produced) a form for which Pienemann (1998) and Johnston (1995) would classify them as unready - namely, the Spanish subjunctive. In addition, full processing instruction (explicit information + structured input activities) brought about effects that were significantly different from the other instruction types, for both ready and unready learners. Finally, a significant difference between pretest and posttest scores was found for all instruction types on both the GJT and the PDT. In summary, the results of this study lend no support to Processability Theory as proposed by Pienemann (1998) and raise significant doubts concerning some aspects of the hierarchy for Spanish put forth by Johnston (1995). Replication of the present study is recommended along with the incorporation of a delayed posttest and the examination of other grammatical forms both in Spanish and other L2s.

In essence, this study has examined an interaction between two different yet complimentary theoretical frameworks - Input Processing and Processability Theory. Input Processing was taken into account in that Processing Instruction and its components were utilized as treatment types, while Processability Theory and its corresponding hierarchy were incorporated into the assessment phases of the study. Clearly, Processability Theory cannot account for the present results, and this begs the question: What *does* account for these findings? Perhaps it is the notion of communicative value (see VanPatten, 1985) that sheds light on these results. The fact that the object marker

a is of relatively lower communicative value than the subjunctive may play a role in whether learners were able to attend to, process, and later produce these forms. Alternatively, it may be that some of the processing strategies outlined within the Input Processing framework (see VanPatten, 1996) interfere more than others. According to BP, processing the subjunctive is difficult due to VanPatten's PI and P4, while the difficulty learners have with the object marker is attributed primarily to P3 as well as P2. It could be argued, for instance, that the hindrance introduced by the first noun strategy to learners' ability to process L2 features is greater than the hindrance caused by learners preference for processing utterance initial forms (which hinders subjunctive acquisition). Communicative value and/or a relative "weighting" of VanPatten's processing principles are only two suggested explanations for the present results, which remain to be examined through further experimentation.

Appendix A

Grammaticality judgment test: Instruction line and sample assessment items

Instructions: Read the following Spanish sentences and indicate whether each is **Possible** or **Not Possible** by circling your choice, or select the **I Don't Know** option if you don't know. If you indicate that a sentence is **Not Possible,** write in the necessary correction that would make the sentence possible.

1. Es imposible que Juan venga antes. (Possible) Not Possible I Don'tKnow

2. Hay no estudiantes de filosofía en miresidencia.
Possible (Not Possible) I Don'tKnow

3. La abogada defiende a su cliente.
Possible (Not Possible) I Don'tKnow

Appendix B

Sample SI Activity Items

Referential SI Activity Items: Object Marker *a*

Actividad. Select the best rendition of each sentence.

1. A mi mama la besa mucho mi papa.
   a. My mother kisses my dad a lot.
   b. My father kisses my mom a lot.

2. A mi papa no lo comprendo yo.
    a. I don't understand my father.
    b. My father doesn't understand me.

Affective SI Activity Items: Object Marker *a*

Actividad. As the largest generation of American citizens ages, our society is becoming older, with senior citizens outnumbering other age groups. How do you think the older generation feels about the younger generations? And how do young people feel about those much older? Mark the following statements Cierto or Falso according to your personal opinion.

Cierto Falso A la "Generación X» no la comprenden los viejos.
Cierto Falso A los viejos no los respetan los jóvenes.

Referential SI Activity Items: The Subjunctive

Actividad: Opinions about groups of people. Based on what your instructor says, place a check by the phrase that best completes each statement.

1) __.. .comen comida muy sana.
__.. .coman comida muy sana.

2) __.. .cantan muy bien.
__.. .canten muy bien.

3) ___... son muy arrogantes.
___ .. .sean muy arrogantes.

Script:

1. Es cierto que muchos atletas profesionales...
2. No creo que los Rolling Stones...
3. No es probable que todos los actores...

Affective Activity Items: The Subjunctive
Actividad: Give your opinion about each statement. Is it referring to Homer and Bart or Marge and Lisa Simpson? Perhaps some of the statements describe all of them. Maybe others don't describe any of them.

No es muy probable que...	Homer y Bart	Marge y Lisa
.. .les guste la música clásica.	___	___
...siempre digan la verdad.	___	___
... sean perezosos/as.	___	___
... eviten sus responsabilidades.	___	___

Table 1. Pienemann's (1998) hierarchy of processing procedures.

Processing procedures	Structural outcome	Example (Spanish)
5. Subordinate clause procedure	main and subordinate clause	subjunctive
4. S-procedure	interphrasal information exchange	subject-verb agreement
3. Phrasal procedure	phrasal information exchange	noun phrase agreement
2. Category procedure	lexical morphemes	canonical order
1. Word / lemma access	"words"	single word

Table 2. Johnston's (1995) hierarchy of processing procedures for Spanish.

Stage	Syntax	Example	Processing Principle
7	Relative Pronoun Marking	Subjunctive marking in subordinate clause	Exchange of information between main and subordinate clause
6	Clitic Sequencing	"Se" Clitic V X S	Production of clitic pronoun sequences
5	Free Word Order	0 Clitic V X S	Marking of objects with clitic pronouns; object agreement
4	Subject Medial- VSO	Question Inversion Simple Inversion Adverb-fronted Inversion Phrasal agreement	Emergence of categories and features in internal position
3	Subject Final- VOS, VS	Adverb fronting Restricted verb marking	Thematic information in initial or final position
2	Canonical Order	SVO	Semantic Order / NVN
1	Words or Formulae	Word production	Undifferentiated chunks

Table 3. Experimental Sessions and Tasks.

Session 1 : Both Structures	Session 2: Object Marker	Session 3: Subjunctive
Background Questionarne	Instruction: object marker	Instruction: subjunctive
GJT pretest: both structures	GJT posttest: object marker	GJT posttest: subjunctive
PDT pretest: both structures	PDT posttest: object marker	PDT posttest: subjunctive

*Note: One week elapsed between each experimental session.

Table 4. Frequencies of Develpoment by Treatment Group and Structure

Structure	Treatment	No. of ready learners	Development
Object marker	El	6	2
	SI	7	2
	PI	6	3
	Control	6	0
Subjunctive			
	El	0	2
	SI	0	3
	PI	0	6
	Control	0	0

Table 5. *P*- values for Instruction Type Contrasts for Emergence on the PDT.

	El	SI	PI	Control
El		.9332	.0438	.0162
SI	.9332		.0497	.0314
PI	.0438	.0497		.0017
Control	.0162	.0314	.0017	

Table 6. *P*- values for Instruction Type Contrasts for Accuracy on the PDT.

	EI	SI	PI	Control
EI		.6658	.0549	.0351
SI	.6658		.0909	.0195
PI	.0549	.0909		.0041
Control	.0351	.0195	.0041	

Figure Captions

Figure 1. Summary of All Results

Grammaticalitv Judgment Task

subjunctive > personal *a*

PI = SI = El

PI, SI, El > Control

Picture Description Task

Emergence Measure

PI, SI, El > Control

El = SI

PI > SI, El

AccuracyMeasure

PI, SI, El > Control

PI = SI = El

subjunctive > personal *a*

References

ADAMS, M. (1978). Methodology for examining second language acquisition. In E. Hatch (Ed.), *Second language acquisition: A book of readings* (pp. 278-296). Rowley, MA: Newbury House.

ANDERSSON, A.B. (1992). *Second language learners' acquisition of grammatical gender in Swedish.* Gothenburg monographs in linguistics, volume 10. Gothenburg, Sweden: University of Gothenburg.

BRINDLEY, G. (1991). ***L****earnability in the ESL classroom.* Paper presented at the RELC Seminar on Language Acquisition and the Second/Foreign Language Classrooms, Singapore,

CLAHSEN, H. (1980). Psycholinguistic aspects of L2 acquisition. In S. Felix (Ed.), *Second language development,* (pp. 57-79). Tübingen: Narr.

_____, MEISEL, J. & PIENEMANN, M. (1983). *Deutsch als Zweitsprache. Der Spracherwerb ausländischer Arbeiter.* Tübingen: Narr.

COLLENTINE, J. (1998). Processing instruction and the subjunctive. *Hispania, 81*, 576-587.

DOI, T., & YOSHIOKA, K. (1990). Speech processing constraints on the acquisition of Japanese particles: Applying the Pienemann-Johnston model to Japanese as a second language. In T. Hayes and K. Yoshioka (Eds.), *Proceedings of the first conference on second language acquisition and teaching* (Vol. 1, 23-33). Japan: Language Programs of the International University of Japan.

DULAY, H. & BURT, M. (1973). Should we teach children syntax? *Language Learning, 23,* 245-258.

_____ (1974). A new perspective on the creative construction process in child second language acquisition. *Language Learning, 24,* 253-278.

ELLIS, R. (1989). Are classroom and naturalistic acquisition the same: A study of the classroom acquisition of German word order rules. *Studies in Second Language Acquisition, 11,* 303-328.

FARLEY, A.P. (2001a). The effects of processing instruction and meaning-based output instruction. *Spanish Applied Linguistics, 5,* 57-94.

_____ (2001b). Authentic processing instruction and the Spanish subjunctive. Hispania, 84, 289-299.

_____ (2003a). Processing instruction and meaning-based output instruction. In B. VanPatten (Ed.), *Processing Instruction.* New Jersey: Erlbaum Press.

_____ (2003b). Processing instruction and the Spanish subjunctive: Is explicit information needed? In B. VanPatten (Ed.), *Processing Instruction.* New Jersey: Erlbaum Press.

HUANG, J. (1970). *A Chinese child's acquisition of English syntax.* Unpublished MA TESL thesis. University of California at Los Angeles.

HYLTENSTAM, K. (1987). Markedness, language universals, language typology and second language acquisition. In C. Pfaff (Ed.), *First and second language acquisition processes* (55-78). Cambridge, MA: Newbury House.

JOHNSTON, M. (1995). *Stages of acquisition of Spanish as a second language.* University of Western Sydney, Macarthur: The National Languages and Literacy Institute of Australia, Language Acquisition Research Centre.

LARSEN-FREEMAN, D. & LONG, M.H. (1991). *An introduction to second language acquisition research.* New York: Longman.

LIGHTBOWN, P. & SPADA, N. (1999). Instruction, first language influence, and developmental readiness in second language acquisition. *The Modern Language Journal, 83, 1-22.*

MACKEY, A. (1995). Stepping up the pace: Input, interaction and interlanguage development— An empirical study of questions in ESL. Unpublished Ph.D. Dissertation. University of Sydney, Australia.

_____ & PHILP, J. (1998). Recasts, interaction and interlanguage development: Are responses red herrings? *Modern Language Journal, 82,* 338-356.

McLAUGHLIN, B. (1987). *Theories of second language learning.* London: Edward Arnold.

MEISEL, J., CLAHSEN, H. & PIENEMANN, M. (1981). On determining developmental stages in natural second language acquisition. *Studies in Second Language Acquisition, 3,* 109-135.

PAVESI, M. (1986). Markedness, discoursal modes, and relative clause formation in a formal and niformal context. *Studies in Second Language Acquisition, 8,* 38-55.

PIENEMANN, M. (1984). Psychological constraints on the teachability of languages. *Studies in Second Language Acquisition. 6, 2,* 186-214.

_____ (1985). Leamability and syllabus construction. In K. Hyltenstam and M. Pienemann (Eds.), *Modelling and assessing second language acquisition* (23-76). Clevedon: Mulilingual Matters.

_____ (1987). *Towards an explanatory model of second language acquisition.* Paper given at the Interlanguage Conference, La Trobe University, Melbourne.

_____ (1989). Is language teachable? Psycholinguistic experiments and hypotheses. *Applied Linguistics, 1,* 52-79.

_____ (1998). *Language processing and second language development: Processability theory.* Philadelphia, PA: John Benjamins.

_____ & JOHNSTON, M. (1987). Factors influencing the development of language proficiency. In D. Nunan (Ed.), *Applying second language acquisition research* (45-141). Adelaide: National Curriculum Research Centre, Adult Migrant Education Program.

SCHMIDT, R. (1992). Psychological mechanisms underlying second language fluency. *Studies in Second Language Acquisition, 14,* 357-385.

SCHUMANN, J. (1979). The acquisition of English negation by Speakers of Spanish: A review of the research. In R. Andersen (Ed.), *The acquisition and use of Spanish and English as first and second languages* (pp. 3-32). Washington, D.C.: TESOL.

SILVER, R. (1999). *Learning conditions and learning outcomes for second language acquisition: Input, output, and negotiation.* Unpublished Ph.D. Dissertation. University of Pennsylvania.

SOUCK, G. (1987). Developmental stages in the acquisition of the Dutch negation rule by French speakers. *Rapport d'Activités de TInstitut des Langues, 21,* 41-57.

SPADA, N. & LIGHTBOWN, P. (1993). Instruction and the development of questions in L2 classrooms. *Studies in Second Language Acquisition, 15,* 205-224.

STAUBLE, A. (1981). A *comparative study of a Spanish-English and Japanese-English second language continuum: verb-phrase morphology.* Unpublished Ph.D. dissertation, University of California at Los Angeles.

VANPATTEN, B. (1985). Communicative Value and Information Processing in Second Language Acquisition. In P. Larson, EJudd, and D. Messerschmitt (Eds.) *On TESOL '84.* (89-99) Washington, D.C.: TESOL.

_____ & CADIERNO, T. (1993). Explicit instruction and input processing. *Studies in Second Language Acquisition, 15,* 225-243.

_____ & OIKENNON, S. (1996). Explanation vs. structured input in processing instruction. *Studies in Second Language Acquisition, 12,* 495-510.

_____ & SANZ, C. (1995). From input to output: Processing instruction and communicative tasks. In F. R. Eckman, D. Highland, P. W. Lee, J. Mileham, and R. R. Weber (Eds.), *Second Language Acquisition Theory and Pedagogy,* (169-185). Mahwah, NJ: Erlbaum.

WAGNER-GOUGH, J. (1975). *Comparative studies in second language learning.* CAL ERIC/ CLL Series on Languages and Linguistics, volume 26.

WHITE, L. (1991). Second language competence versus second language performance: UG or processing strategies. In L. Eubank (Ed.), *Point counterpoint: Universal Grammar in the second language.* Amsterdam: John Benjamins.

YOUNG, D. (1974). *The acquisition of English syntax by three Spanish-speaking children.* Unpublished MA TESL thesis, University of California at Los Angeles.