Generalizability of Processing Instruction Research

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Topics of Discussion

- Theoretical foundations
- Pedagogical model
- Processing Instruction research framework
- Generalizability of Processing Instruction research

Theoretical Foundations

- The theoretical background is VanPatten's input processing theory (1996, 2004, 2007,2011)
- What is input processing?
- Input processing is concerned with how learners initially perceive and process linguistic data in the language they hear or read.
- Input processing is concerned with those psycholinguistic strategies and mechanisms by which learners derive intake from input.
- Input processing theory captures a series of internal strategies learners might use in comprehending sentences and how these strategies might affect acquisition.

- What linguistics data learners process during comprehension?
- Why would L2 learners process some linguistics data in the input and not others during comprehension?

Theoretical Foundations

- Input processing capacity of L2 learners is limited, only certain features will receive attention during input processing.
- When learners process input, they filter the input which is reduced and modified into a new entity called ‘intake’.
- Input processing consists of two sub-processes: making form-meaning connections; and parsing.
- L2 learners must be able to connect a form with its meaning in the input they receive (the morpheme –*ed*- on the end of the verb in English refers to an event in the past).
- L2 learners must be able to determine, for example, which is the subject and which is the object in a sentence they hear or read. Learners must be able to appropriately map syntactic structure into the sentence.

Theoretical Foundations

- In its current form, VanPatten's theory consists of two overarching principles of input processing (each of which is further explicated with sub-principles):
- Principle 1. The Primacy of Meaning Principle. Learners process input for meaning before they process it for form.
- Principle 2. The First Noun Principle. Learners tend to process the first noun or pronoun they encounter in a sentence as the subject or agent.

Theoretical Foundations

- The Lexical Preference Principle: Learners will tend to rely on lexical items as opposed to grammatical form to get meaning when both encode the same semantic information.
- The Preference for Nonredundancy Principle: Learners are more likely to process nonredundant meaningful grammatical form before they process redundant meaningful forms.
- The Sentence Location Principle: Learners tend to process items in sentence initial position before those in final position and those in medial position.

Theoretical Foundations: processing problems

- Lexical Preference
- *Yesterday I played tennis with Paul*

- Redundancy and Meaningfulness
- *The cat is sleeping*
- *The cat sleeps ten hours everyday*

- Location
- *Non penso che parli bene italiano*

Pedagogical model: Processing Instruction

- What is processing instruction?
- Processing instruction is an approach to grammar instruction that will guide and focus learners' attention when they process input.
- Processing instruction attempts to influence, alter or improve the way learners process input.
- This pedagogical approach works with input and with the processes learners use to get data from that input.
- Processing instruction consists of three basic components:
  - Learners are given information about a linguistic structure or form.
  - Learners are informed about a particular processing strategy that may negatively affect their picking up of the form or structure during comprehension.
  - Learners are pushed to process the form or structure during activities with *structured input*- input that is manipulated in particular ways to push learners to become dependent on form and structured to get meaning.

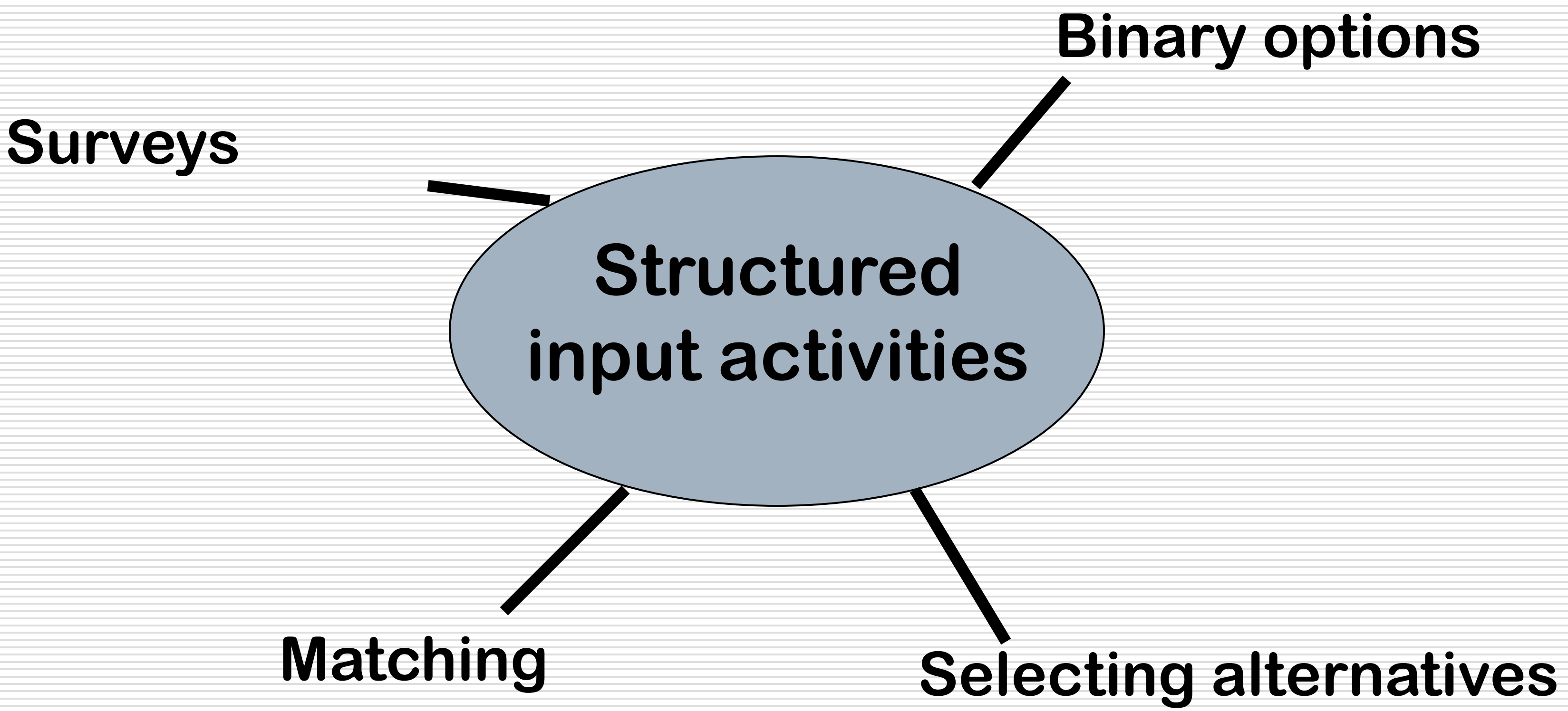
Pedagogical model: Processing Instruction

- Present one thing at a time.
- Keep meaning in focus.
- Move from sentences to connected discourse.
- Use both oral and written input.
- Have the learner do something with the input.
- Keep the learner’s processing strategies in mind.

- Referential activities are those for which there is a right or wrong answer and for which the learner must rely on the targeted grammatical form to get meaning..

- Affective structured input activities are those in which learners express an opinion, belief, or some other affective response and are engaged in processing information about the real world.

Pedagogical model: Structured input activities



Processing Instruction research framework

- 1. How does Processing Instruction compare to other types of instruction?
- 2. What makes Processing Instruction effective?
- 3. Are the effects Processing Instruction durative (short-term) and longitudinal (long-term)?
- 4. Can Processing Instruction be delivered effectively online as well as in classrooms?
- 5. How effective is Processing Instruction for improving learner’s performance on discourse-level tasks?
- 6. Can you increase the positive effects of structured input practice on language development by enhancing it aurally and/or textually?
- 7. What are the transfer-of-training effects for processing instruction?

Processing Instruction research framework

- 1. Processing Instruction is more effective than traditional instruction (VanPatten & Cadierno, 1993; Benati, 2001; Cheng, 2004).
- -interpretation: PI > TI
- -production: PI = TI
- Processing Instruction is overall more effective than meaning output-based instruction (Benati, 2005: Farley 2004; Lee & Benati, 2007a) .
- - interpretation: PI > MOI
- - production: PI = MOI
- 2. Structured-input practice is the causative factor (Van Patten and Oikkenon 1996; Benati, 2004: 4a, 2004b: Farley 2004b; Wong 2004b).
- - interpretation: PI = SI > EI
- - production: PI = SI > EI
- 3. Processing instruction has short-term and long-term effects (VanPatten & Fernández, 2004).

Processing Instruction research framework

- 4. Processing Instruction can be delivered quite effectively by a computer to an individual learner. The computer is not superior to an instructor when it comes to Processing Instruction (Lee & Benati, 2007a).
- -interpretation: classroom = computer
- -production: classroom = computer
- 5. Processing Instruction has been effectively measured in sentence and discourse tasks (interpretation and production, Benati & Lee, 2010).
- - interpretation: yes
- - production: yes
- 6. Textual and aural enhancement of structured input activities do not bring about greater improvement in learners' performance (Lee & Benati, 2007b).
- - interpretation: PI/SI = PI/SI enhanced
- - production: PI/SI = PI/SI enhanced
- 7. Processing instruction has primary and secondary effects (Benati & Lee, 2008).
- - interpretation: yes
- - production: yes

Processing Instruction research framework

- Spanish direct object pronouns
- Spanish third person past tense
- English simple past tense
- French imperfect
- English third person singular
- Italian future tense
- French future tense
- Spanish copula
- French causative
- Italian subjunctive
- French subjunctive
- Spanish subjunctive
- Italian gender agreement
- Japanese passive forms
- English passive forms

Generalizability of Processing Instruction Research

- Processing Instruction is effective with different processing strategies.
- Processing Instruction has positive effects on a variety of grammatical forms (morphology, syntactic structures and semantics linguistics items).
- Processing Instruction is effective in different languages (e.g. English, French, German, Italian, Spanish, Japanese).
- Processing Instruction is effective for instilling target-language specific strategies, no matter the native language of the learners (Chinese, Greek, Italian, English, Japanese).
- Processing Instruction is an effective pedagogical intervention with young learners as well as with older learners.

Generalizability of Processing Instruction Research

- The Strategies Hypothesis
- The Target Language Hypothesis
- The Native Language Hypothesis
- The Age Hypothesis

The Strategies Hypothesis

- Processing Instruction can help L2 learners to apply appropriate processing strategies.

- Processing Instruction data exist for syntactic strategies, perceptual strategies and semantic strategies.

The Target Language Hypothesis

- Processing Instruction can help learners of any target language develop an appropriate, target-language specific processing strategy to address a target-language specific processing problem.
- Processing Instruction is equally effective across a variety of romance and non romance languages.

The Native Language Hypothesis

- Processing Instruction will be effective for instilling target-language specific processing strategies, no matter the native language of the learners.
- Processing Instruction data exist for different L1s.

The Age Hypothesis

- Processing Instruction will be just as effective as an intervention with younger learners as it is with older learners.
- Processing Instruction data exist for school-aged learners and adult learners.

- THANK YOU