Toward a framework for the systematic study of L1 and L2 fluency: What are the important questions?

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Preface

Are the goals for L2 and L1 researchers different?

L2 researchers:
 - L2 disfluencies are disfunctional
 - L2 disfluencies & experience
 - optimizing fluency acquisition
 - focus not on local mechanisms

Challenges *> Approaches > Bigger Picture > Conclusions*

Outline

- Challenges (for L2 researchers)
- Approaches
- Bigger picture
- Conclusions

Why?

Inherently interesting

Practical issues:
- comprehensibility
- confidence
- motivation
- L2 goal
- L2 gateway
- social capital

Collection of
separate
phenomena

Challenges *> Approaches > Bigger Picture > Conclusions*

A general theory
of fluency

A general theory of fluency

- <u>Linked</u> phenomena
- Generate new questions
- New solutions to practical questions
- Fluency acq. - time - (beyond "snapshots")
- Link L1 & L2 fluency work
- Fluency & skill in general

A general theory
of fluency

- DEFINE (in a principled way)

- OPERATIONALIZE

Defining Fluency

In English: *knowledge, proficiency, skill, ability*

Often, translation equivalents ≠ English "fluency"

Common idea: movement metaphor, fluidity,
                flow, smoothness, speed:
                temporal & hesitation phenomena

What features of oral performance serve as reliable indicators of fluency?

Goldman-Eisler (1968) (focus on L1):

The complete speech act is a dynamic process, demanding the
        <u>mobilization</u> in proper sequence of a series
        of complex procedures and is the
        <u>temporal integration</u> of serial phenomena.

What features of oral performance serve as reliable indicators of fluency?

Rehbein (1987):

"Fluency" means that the activities of <u>planning and uttering</u> can be executed <u>nearly simultaneously</u> by the speaker of the language.

What features of oral performance serve as reliable indicators of fluency?

Meisel (1987):

Fluency equals the communicative acceptability of the speech act, or "communicative fit," and expectation concerning this fit vary according to the situation.
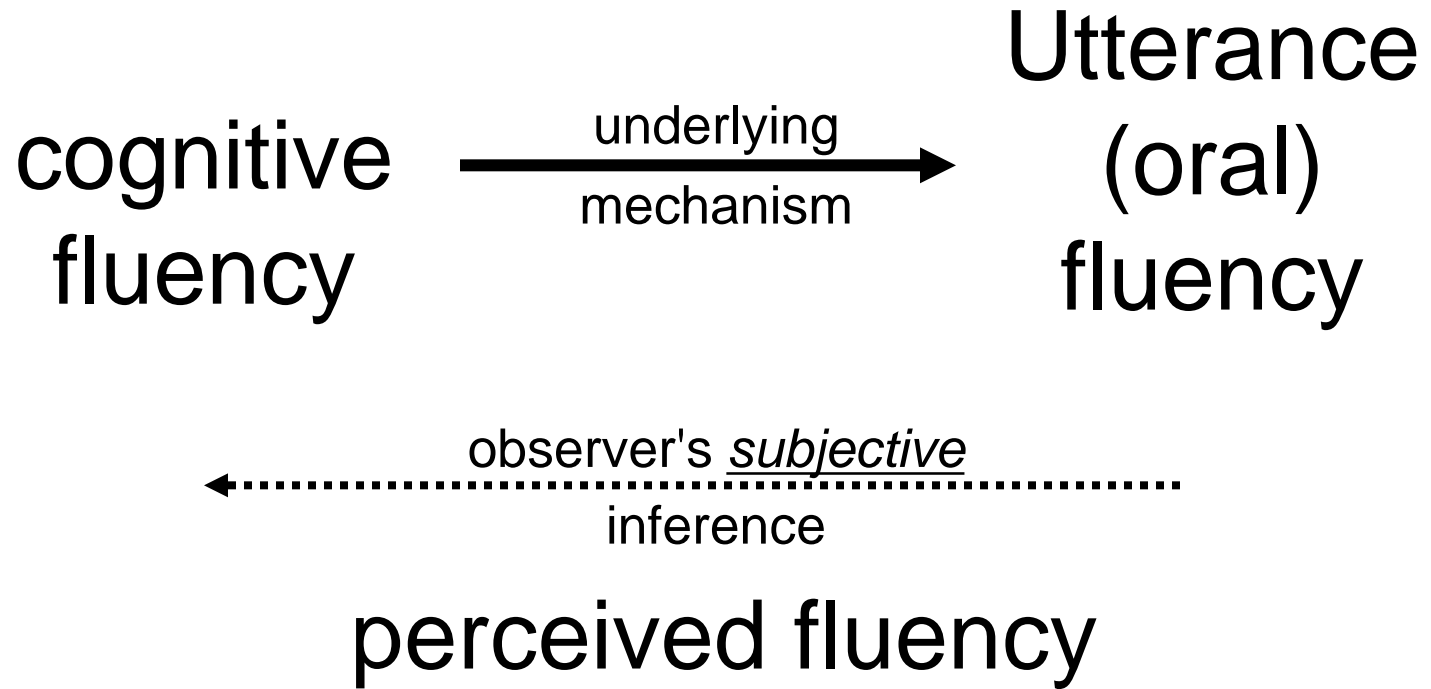
What features of oral performance serve as reliable indicators of fluency

that is, of how efficiently the speaker is able to <u>mobilize and temporally integrate</u>, in a nearly simultaneous away, the <u>underlying processes</u> of planning and assembling an <u>utterance</u> in order to perform a <u>communicatively acceptable</u> speech act?
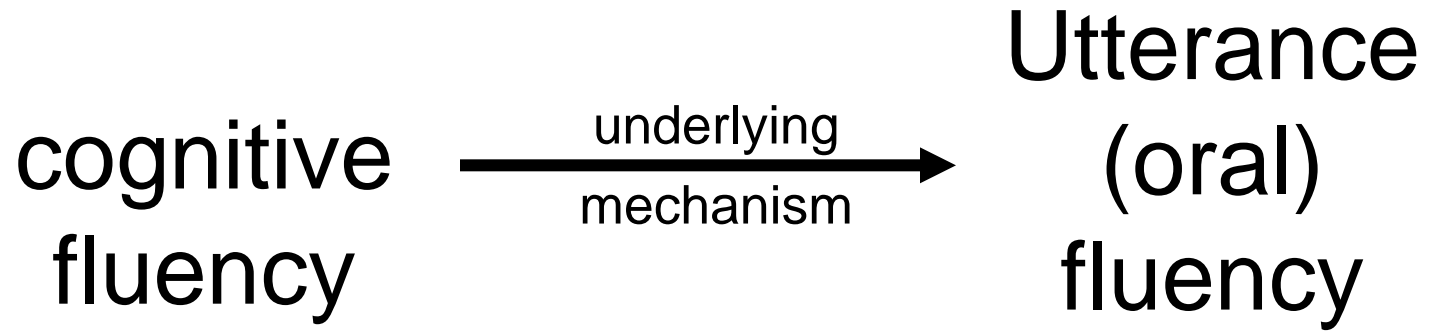
cognitive
fluency

→ underlying
mechanism

Utterance
(oral)
fluency

observer's *subjective*
← ....
inference

perceived fluency

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cognitive
fluency
→ underlying
mechanism
Utterance
(oral)
fluency

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cognitive fluency

underlying mechanism →

Utterance (oral) fluency
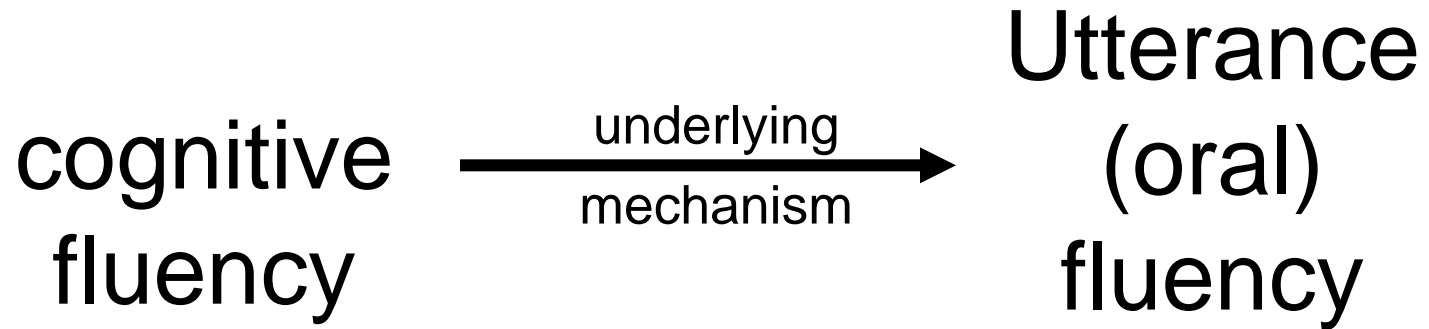
- lexical access speed
- lexical access efficiency
- attention focus
- WM capacity
- phonological WM
- vocabulary size
- Levelt 1999; de Bot 1992
- …

- syllable duration
- syllable rate
- silent pause duration
- silent pause rate
- filled pauses
- phonation time ratio
- Kormos 2006
- …

Challenges *> Approaches > Bigger Picture > Conclusions*

cognitive
fluency

$\xrightarrow{\text{underlying mechanism}}$

Utterance
(oral)
fluency
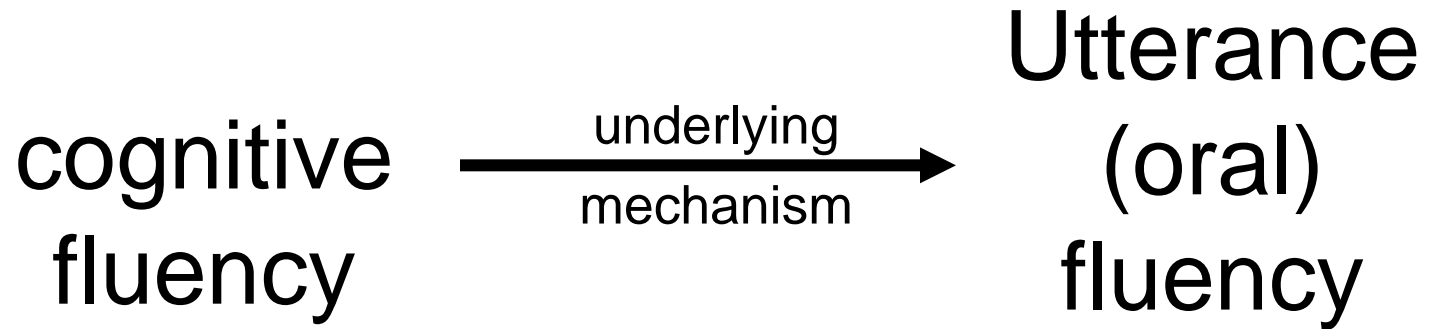
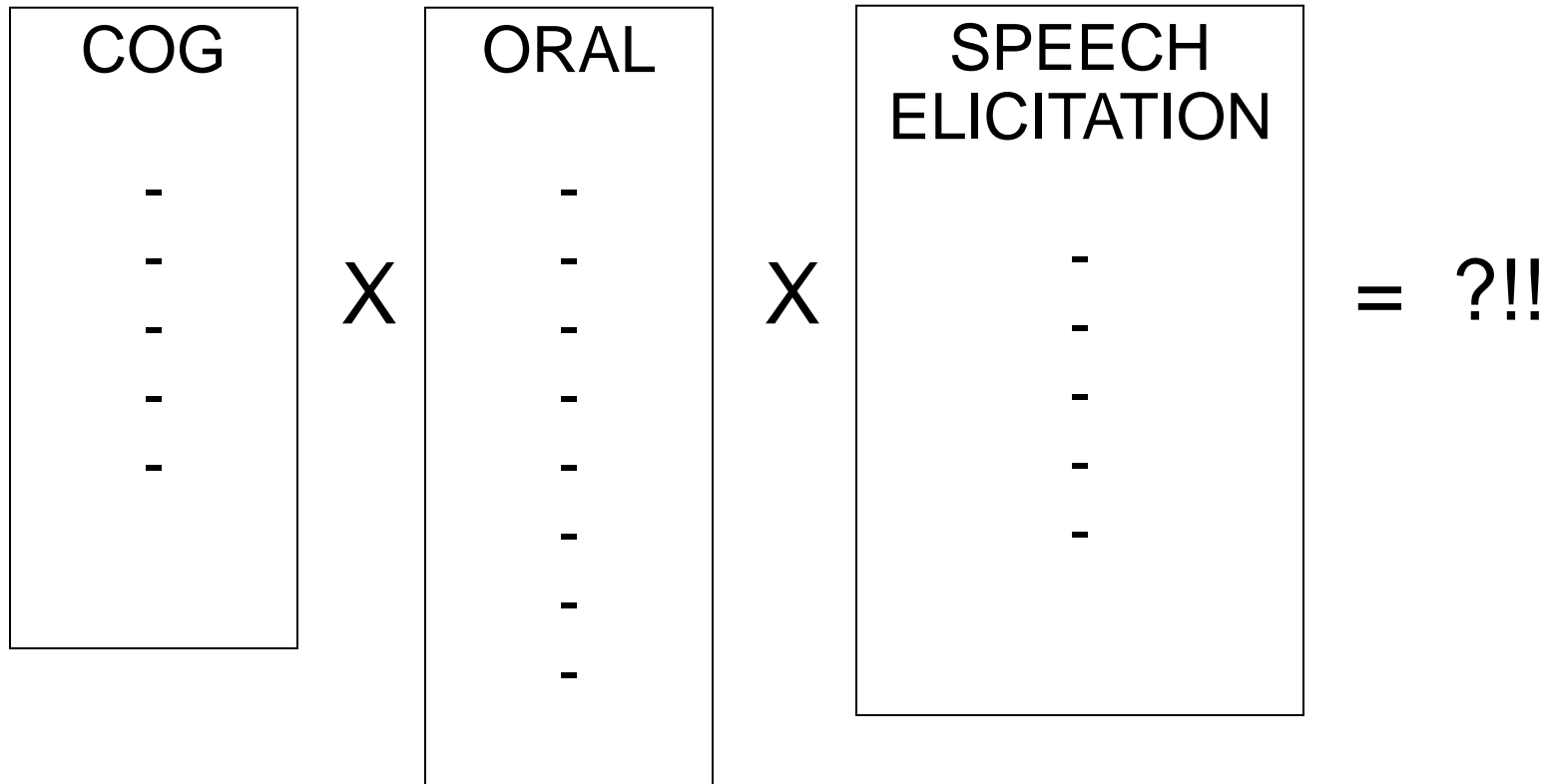Which features? How to operationalize?

problems of replicability

(1) Noise in the data from individual differences
(2) Multiple ways of operationalizing features
(3) Multiple ways of collecting speech samples

The challenge

COG

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X

ORAL

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X

SPEECH
ELICITATION

-
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-
-
-

= ?!!

Challenges *> Approaches > Bigger Picture > Conclusions*

So, what do we do?

cognitive fluency $\xrightarrow{\text{underlying mechanism}}$ Utterance (oral) fluency
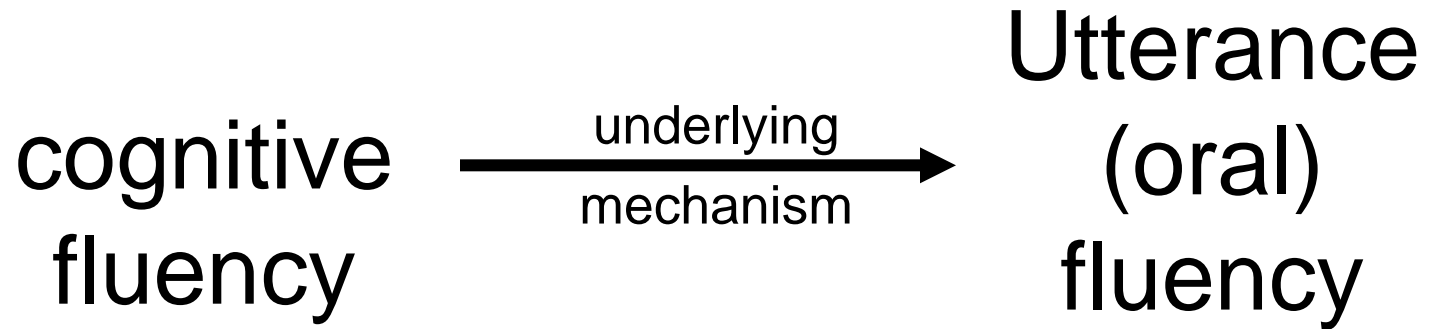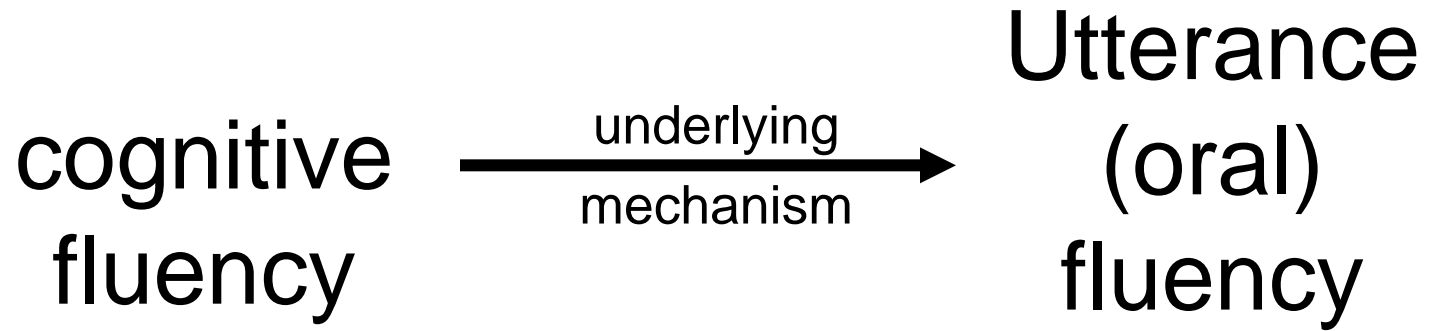
(1) Noise in the data from individual differences
Need baseline data.

In L2 research: Use L1 baseline data
In L1 research: Use other appropriate baseline data

Really cleans up the data!

cognitive
fluency
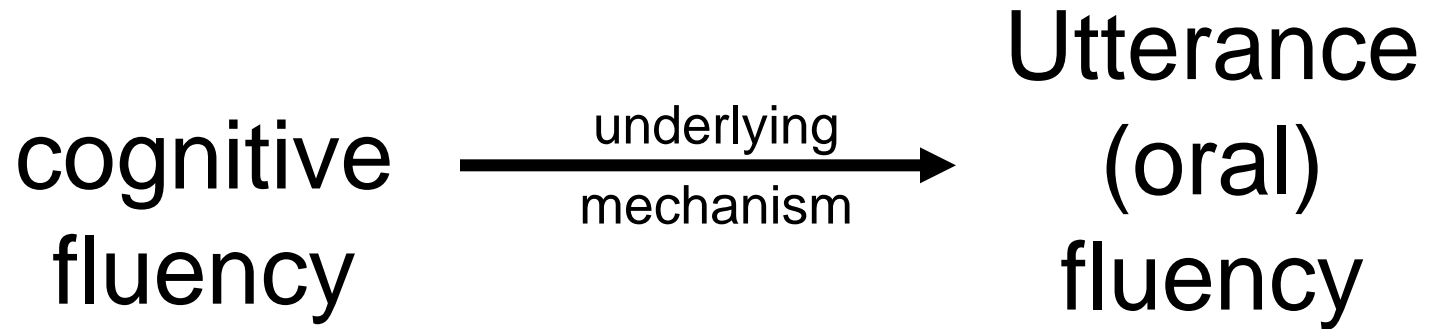$\xrightarrow{\text{underlying mechanism}}$
Utterance
(oral)
fluency

(2) Multiple ways of operationalizing features
Retain oral measures that correlate with cognitive measures.

Avoids arbitrary operational definitions
and adds an explanatory dimension.

cognitive
fluency $\xrightarrow{\substack{\text{underlying} \\ \text{mechanism}}}$ Utterance
(oral)
fluency

(3) Multiple ways of collecting speech samples

Balance between ecologically valid and well controlled.
Need more data on consequences of alternative methods.

Places speech sampling into a theoretical context.

Speech elicitation

Methods:
- Reading aloud
- Recounting past
- Recalling silent film
- Interview
- Storyboards
- …

Issues:
- Planning what to say versus spontaneity
- Complexity
- Genuine communication

(*NB:* all require theory)

Interim Summary

Theory-driven question:
What features … serve as reliable indicators of how <u>efficiently</u> the speaker is able to mobilize <u>underlying</u> processes of assembling an <u>utterance</u> in order to perform a <u>communicatively acceptable</u> speech act
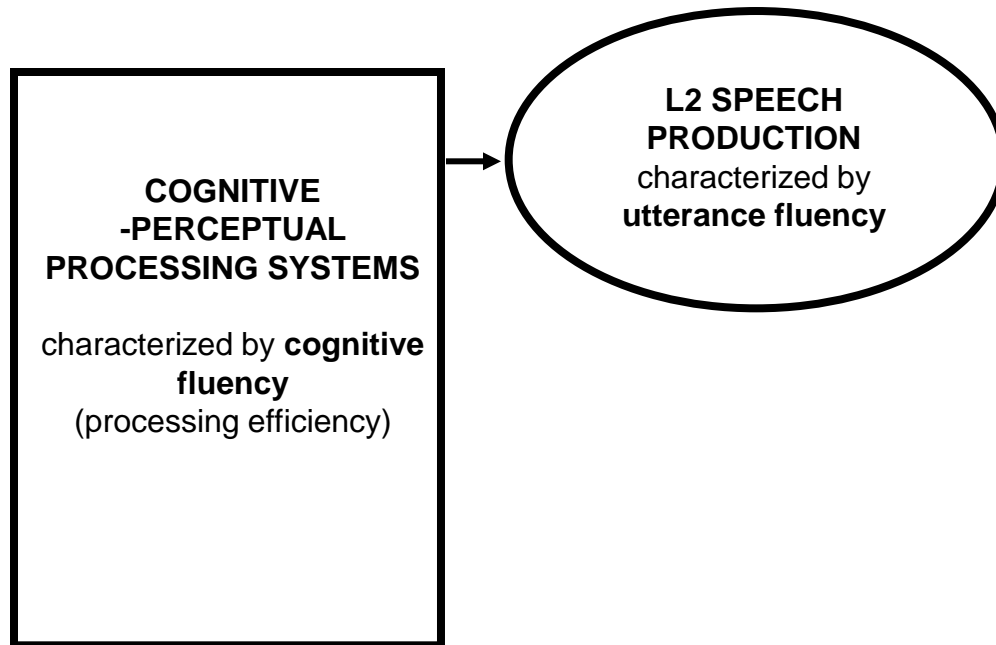
Need to:
- control for noise due to IDs (e.g., use L1 data)
- focus on oral features that correlate with cog measures
- determine best ways to elicit speech

But there is a Bigger Picture

COGNITIVE -PERCEPTUAL PROCESSING SYSTEMS
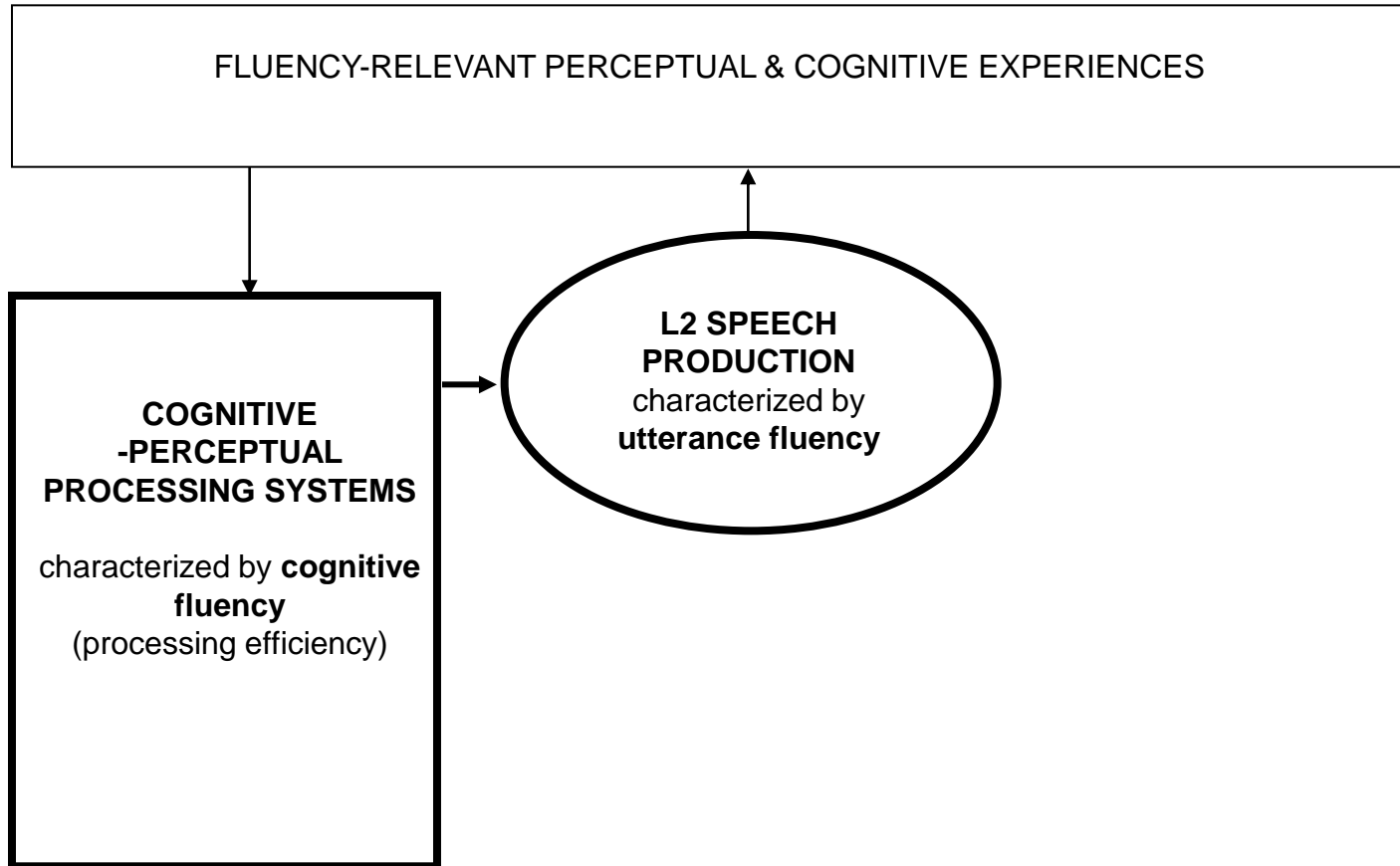
characterized by **cognitive fluency**
(processing efficiency)

L2 SPEECH PRODUCTION
characterized by
utterance fluency

Challenges > Approaches > **Bigger Picture** *> Conclusions*

FLUENCY-RELEVANT PERCEPTUAL & COGNITIVE EXPERIENCES

COGNITIVE -PERCEPTUAL PROCESSING SYSTEMS

characterized by **cognitive fluency** (processing efficiency)

L2 SPEECH PRODUCTION characterized by **utterance fluency**

INTERACTIVE COMMUNICATIVE (SOCIAL) CONTEXT
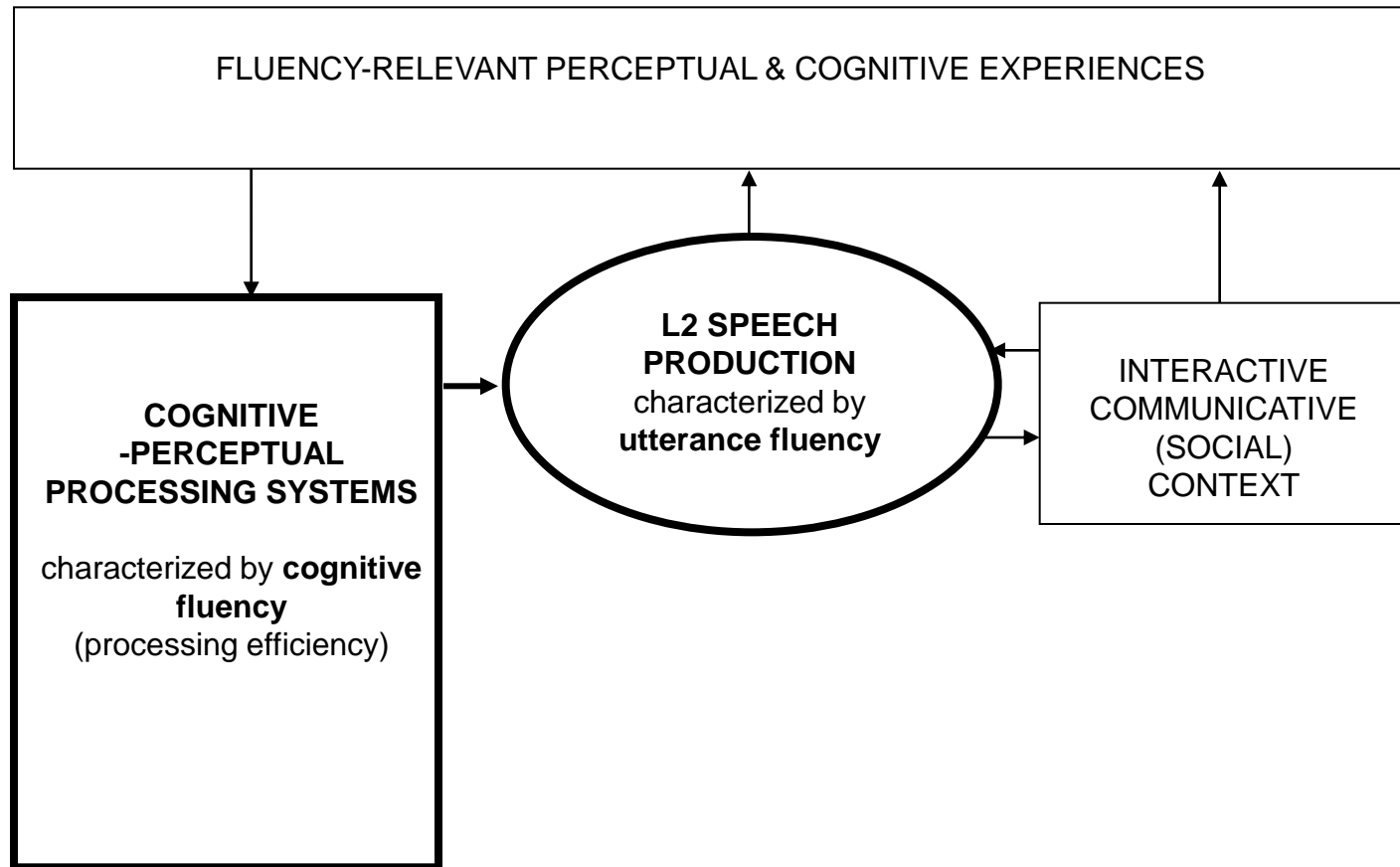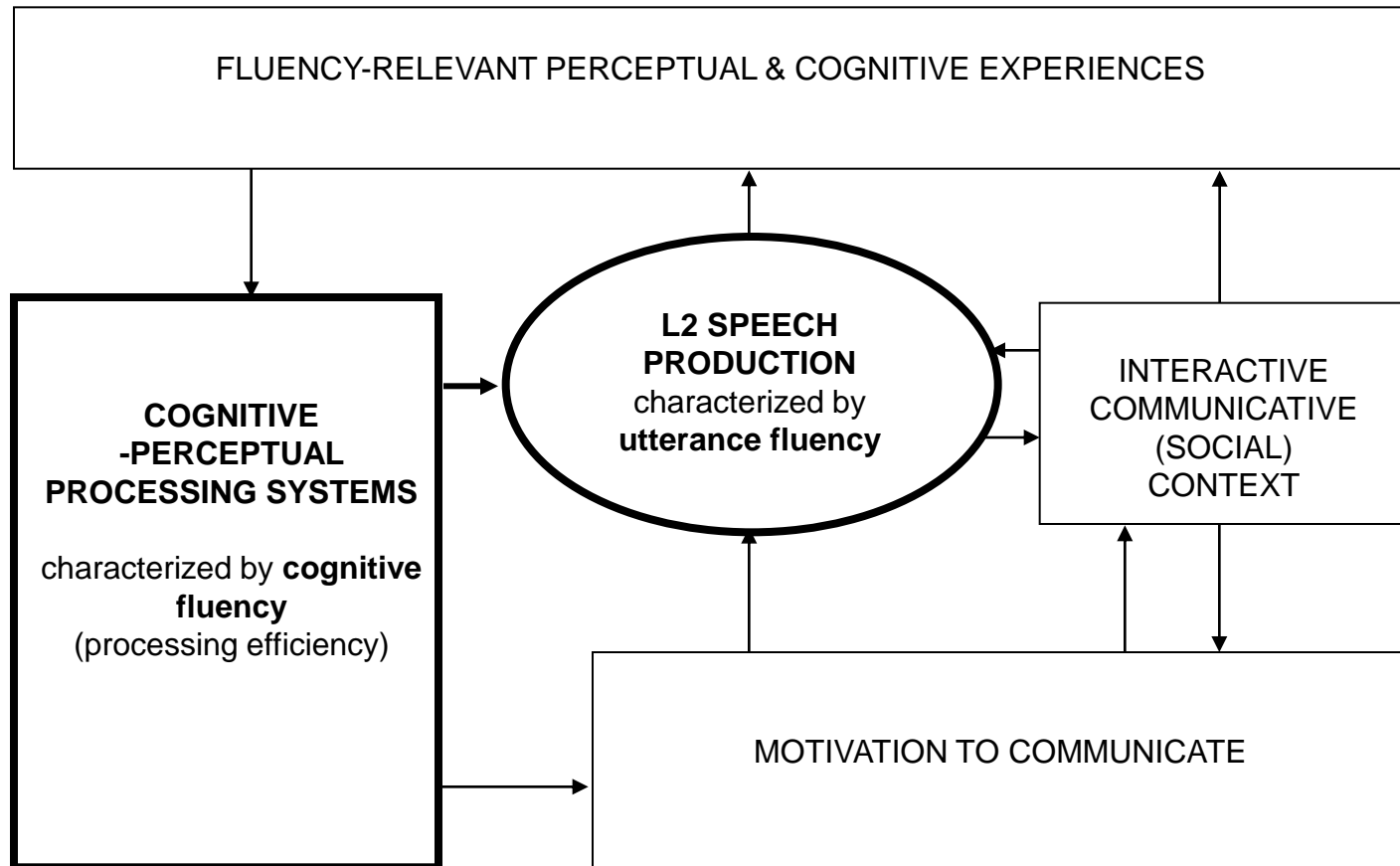
Challenges > Approaches > **Bigger Picture** *> Conclusions*

Repetition, Automatization, Transfer Appropriate Processing
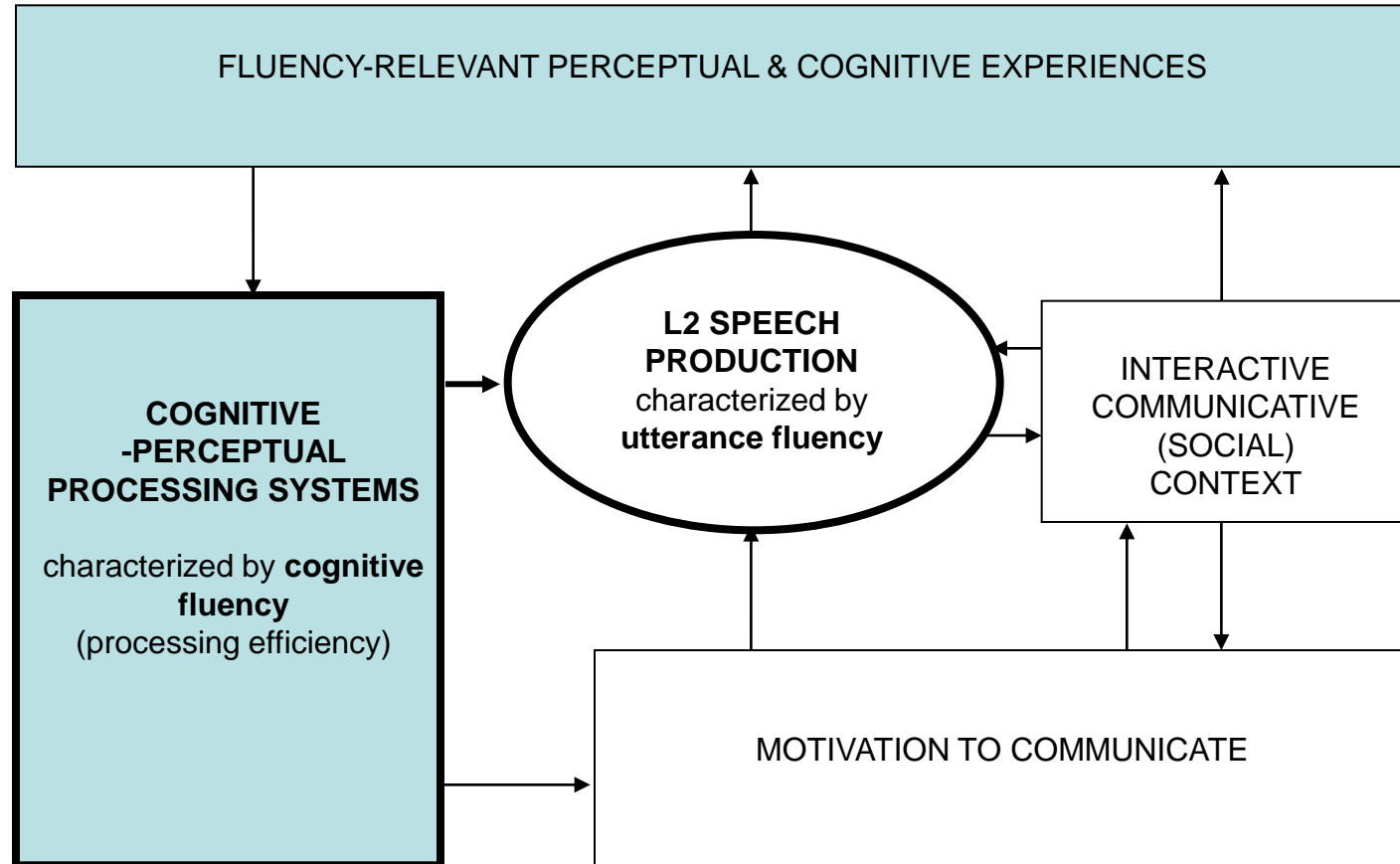
Challenges > Approaches > **Bigger Picture** > Conclusions

Goals: joint attention, reading intentions *(Lieven & Tomasello, 2007)*
Linguistic affordances, formulaic, sociolinguistic, pragmatics
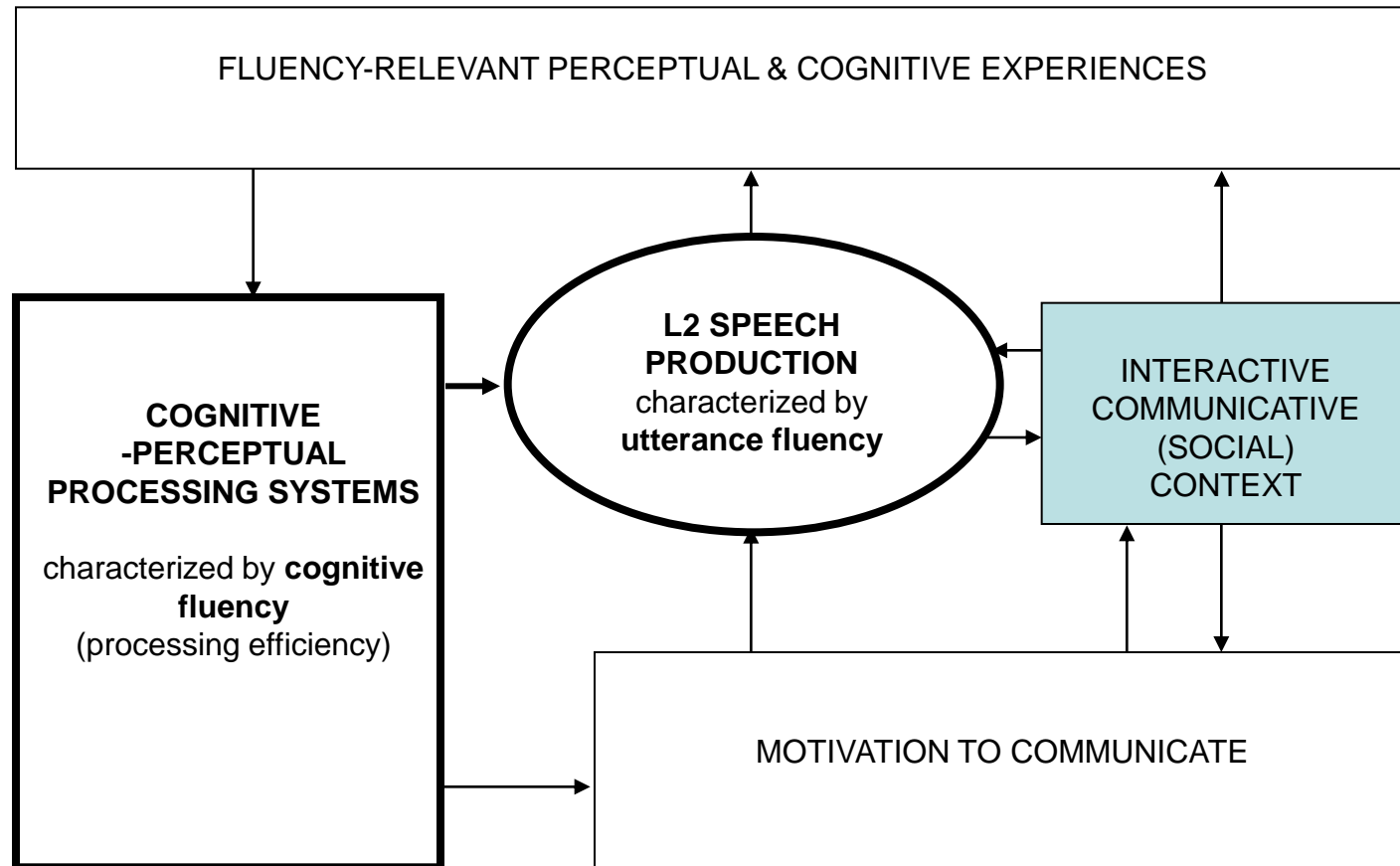
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1. <u>Willingness to speak</u>; <u>L2 Self</u>; <u>Identity</u> (Dornyei & Ushida, 2009)
2. <u>Cognitive Heuristics & self-monitoring</u> (Tversky & Kahneman, 1973)
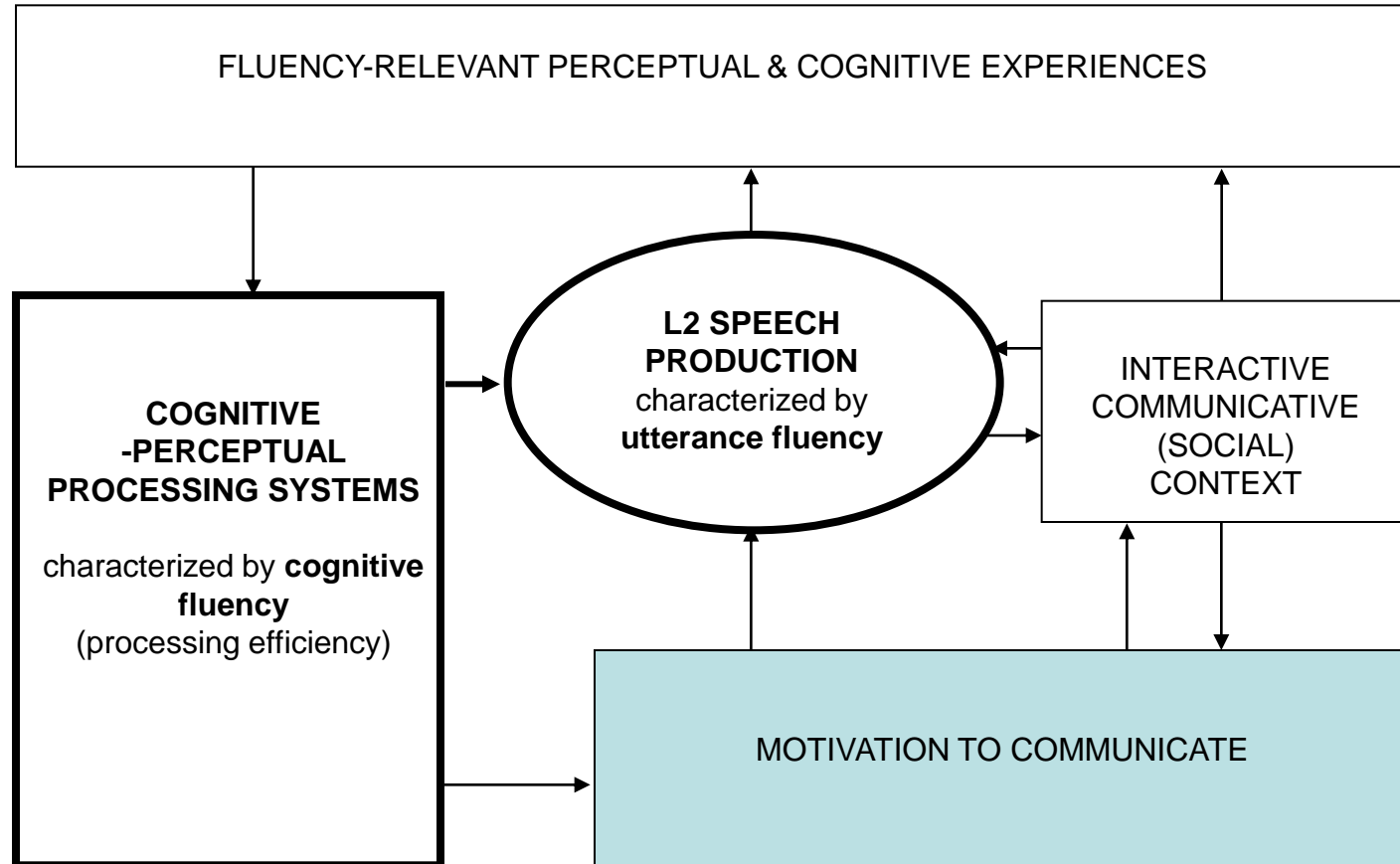
Challenges > Approaches > **Bigger Picture** *> Conclusions*

Dynamical System

FLUENCY-RELEVANT PERCEPTUAL & COGNITIVE EXPERIENCES

COGNITIVE -PERCEPTUAL PROCESSING SYSTEMS

characterized by **cognitive fluency** (processing efficiency)

L2 SPEECH PRODUCTION characterized by **utterance fluency**

INTERACTIVE COMMUNICATIVE (SOCIAL) CONTEXT

MOTIVATION TO COMMUNICATE
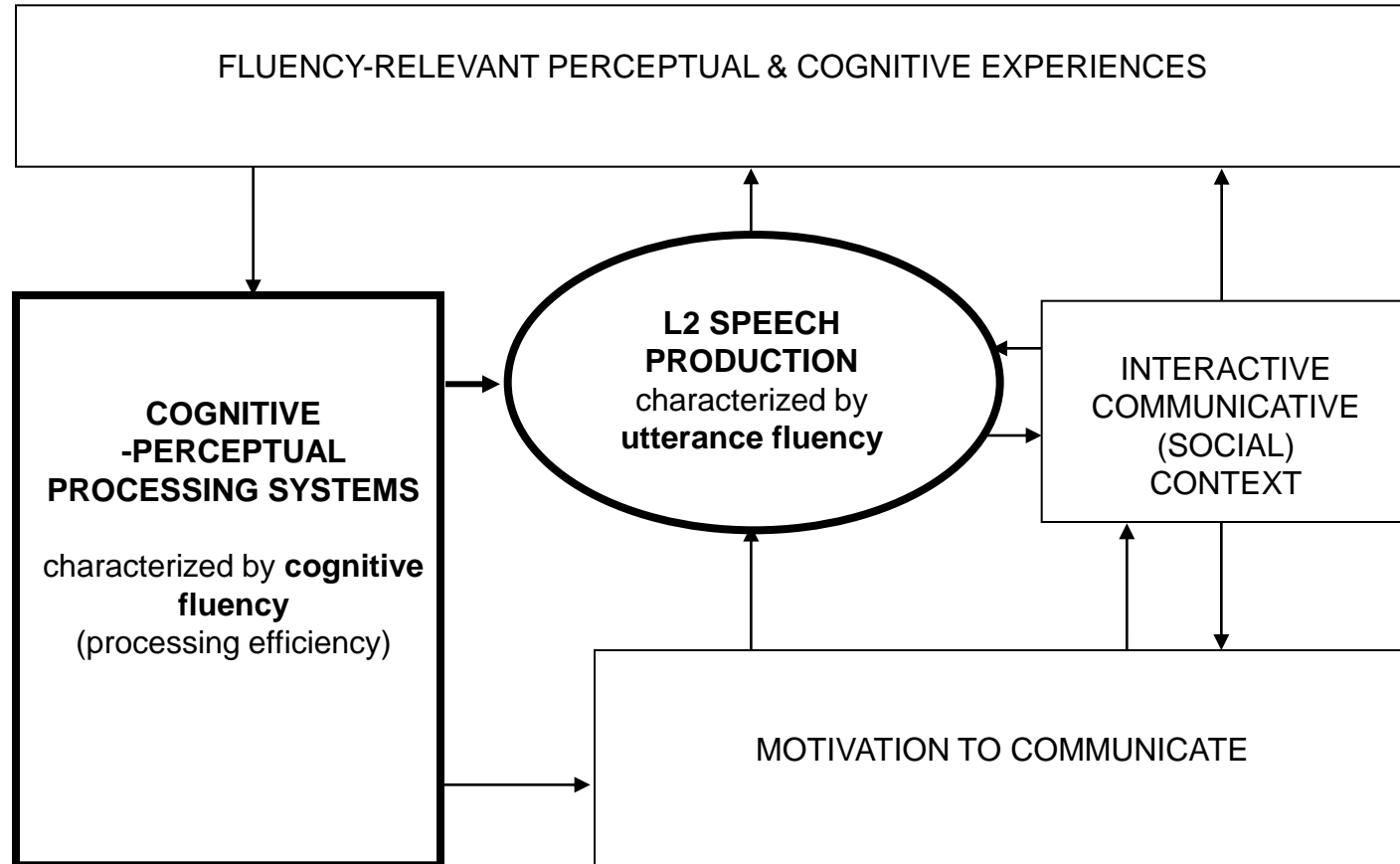
Challenges > Approaches > **Bigger Picture** *> Conclusions*

Development: "vicious" & "virtuous" circles

FLUENCY-RELEVANT PERCEPTUAL & COGNITIVE EXPERIENCES

COGNITIVE -PERCEPTUAL PROCESSING SYSTEMS

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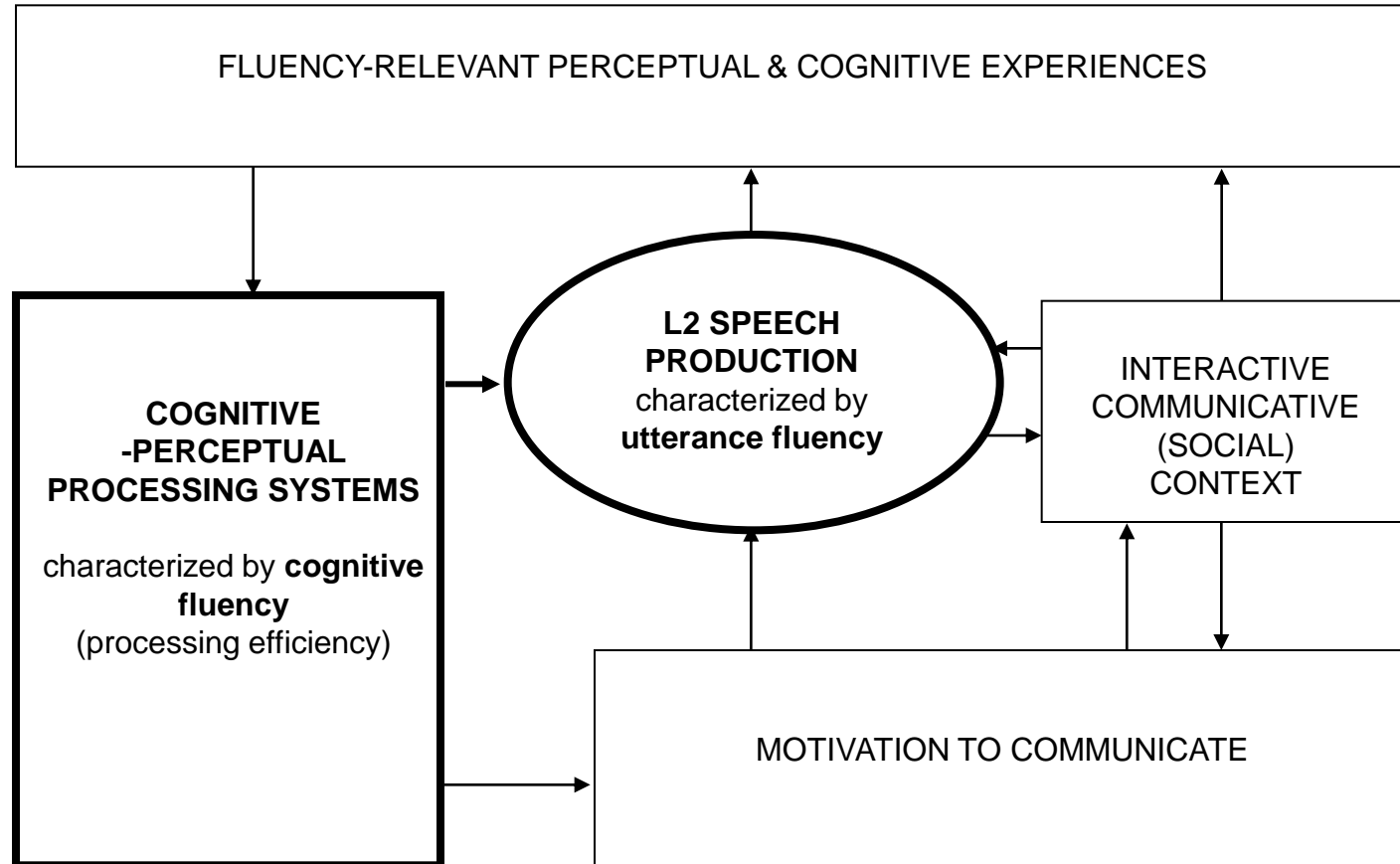
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Dynamical System

de Bot, Lowie, & Verspoor, 2007
Larsen-Freeman & Cameron, 2008
Segalowitz, 2010
Verspoor, de Bot & Lowie, 2011

- Dynamical aspect: Qualitative metaphor only?
  (See Gelfand & Engelhart, 2012)

- Framework (useful perspective but not falsifiable)?
  or
- Theory (testable and falsifiable)?

5 characteristics of dynamic systems

- Heterogeneity of elements & agents

- System dynamics (elements change over time)

- Non-linearity (change changes)

- Openness (external influences; dynamic equilibrium)

- Adaptation (change in one part affects other parts)

[based on Larsen-Freeman & Cameron (2008)]

Conclusions: A Framework

- Focus — general theory of fluency

- Cognitive-oral production link

- Retention criteria: control for IDs; cog-oral links

- Standardize techniques: esp. speech elicitation

- Contextualize fluency: social, motivation

- Explore a dynamical system perspective

Some Important Questions

What are the

- cognitive underpinnings of oral fluency

- best ways to elicit speech

- best practices for automated speech analysis;

- best ways to control for individual differences

- complex interactions underlying development

- ways fluency acts as a gateway/barrier to SLA?

Take Home Message

Focus on a general theory of fluency:

- individual projects take on new meaning

- interdisciplinary collaboration

- L1 & L2 researchers work more closely

- fluency achieves a central place in skill acquisition theory

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Thank You!

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