



# Role of Personality Type in Implicit Second Language Learning & Rule Awareness

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## Introduction

- Variability in second language acquisition partially stems from individual differences such as personality type
- The Big Five personality survey explains personality type through five major dimensions: openness, conscientiousness, extroversion, agreeableness, and neuroticism (John & Srivastava, 1999)
- Grey et al. (2015) used the Big Five personality survey to examine how personality type contributes to implicit learning, an component of second language acquisition.
  - Grey et al. (2015) found that extroversion is negatively correlated with implicit learning. However, no significant correlations were found between the other four major dimensions of personality and implicit learning.
- The current study aims to partially replicate Grey et al. (2015) by exploring the effects of personality type on implicit second language (L2) learning and on the emergence of awareness of underlying grammatical rules.

## Research Questions

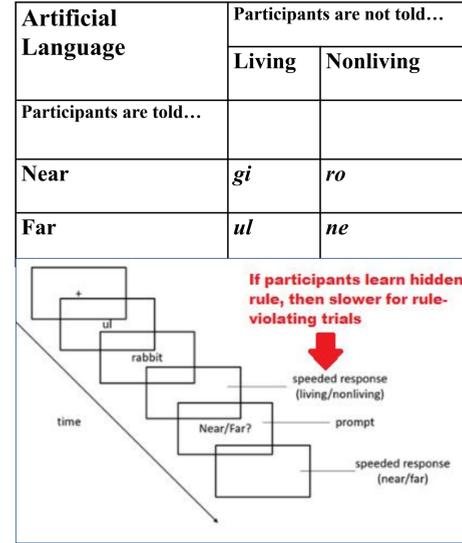
**RQ1:** Which, if any, of the five major dimensions of personality--openness, conscientiousness, extroversion, agreeableness, and neuroticism--are correlated with implicit L2 learning?

**RQ2:** Which, if any, of the five major dimensions of personality are correlated with the emergence of rule awareness?

## Methods

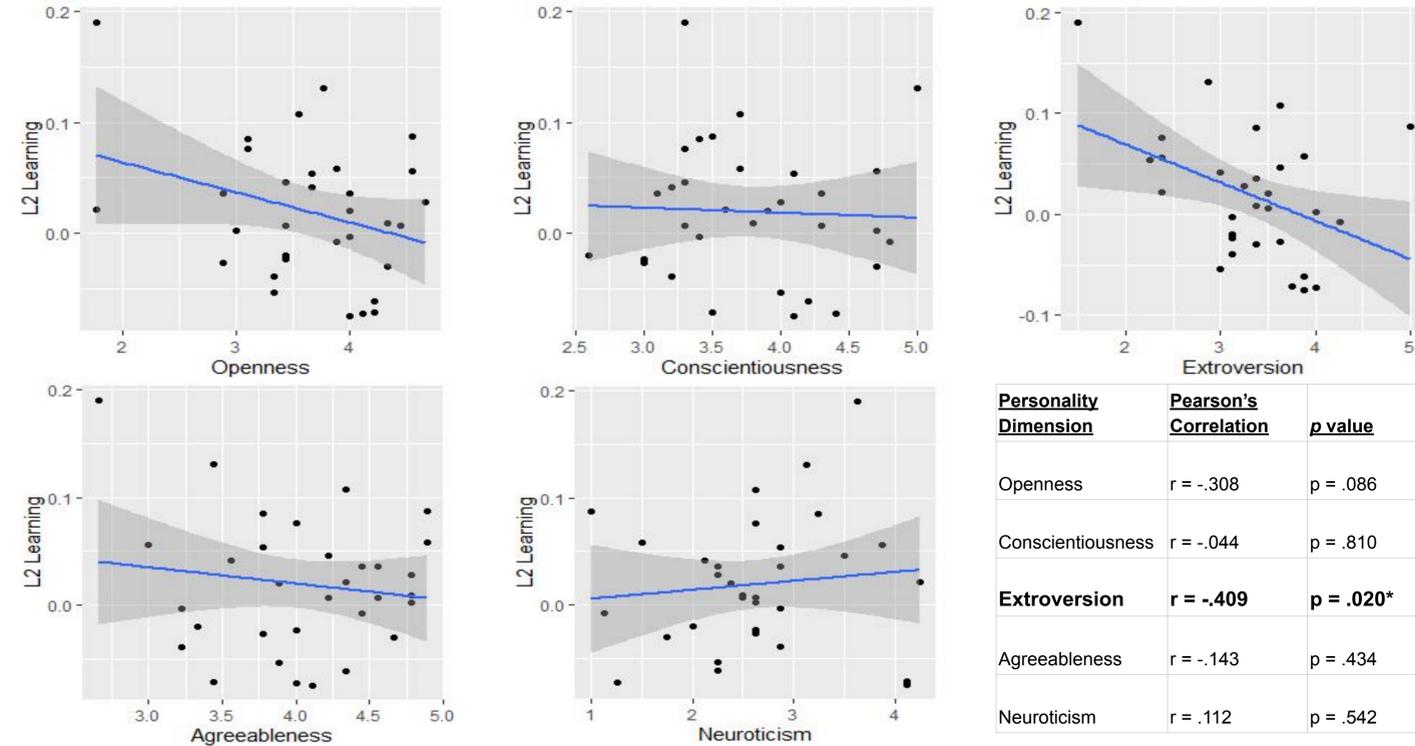
- Participants were 40 college students enrolled in an introductory psychology courses at the U. of Illinois at Chicago. All were native English speakers with varying levels of additional language experience.

Attribute	Mean (Standard Deviation)
Gender	30 female, 10 male
Age	18.6 (0.80)
Self-reported English reading proficiency	4.89/5 (0.31)
Self-reported English writing proficiency	4.87/5 (0.41)
Self-reported English speaking proficiency	4.89/5 (0.38)
Percent reporting additional language	90%
Additional language reading proficiency	3.36/5 (1.36)
Additional language writing proficiency	3.03/5 (1.44)
Additional language speaking proficiency	3.72/5 (1.15)



## RQ 1: Implicit Second Language Acquisition and Personality Type

\*L2 learning was measured as the difference in reaction times on “living/nonliving” response between rule-following trials and rule-violating trials during second block (after sufficient time for learning during first block)\*



Significant negative correlation between extroversion and implicit L2 learning ( $p < .05$ ).  
No significant correlations for openness, conscientiousness, agreeableness, or neuroticism.

## RQ 2: Rule Awareness and Personality Type

\*Participants coded as either “aware” (1) or “unaware” (0) based on debriefing questionnaire responses\*

\*Generalized Linear Model run separately for each personality dimension.\*

Personality Dimension	Beta Value	p value
Openness	$\beta = -0.147$	p = .782
<b>Conscientiousness</b>	<b><math>\beta = 1.594</math></b>	<b>p = .030</b>
Extroversion	$\beta = -0.101$	p = .858
Agreeableness	$\beta = 0.087$	p = .893
Neuroticism	$\beta = -0.044$	p = .924

Significant positive relationship between conscientiousness and rule awareness ( $p < .05$ ).  
No significant relationship for openness, extroversion, agreeableness, or neuroticism.

## Discussion

- For implicit L2 learning, **extroversion** was the only personality dimension with a significant relationship (negative correlation)
- Meanwhile, the other four personality dimensions (openness, conscientiousness, agreeableness, and neuroticism) did **not** correlate significantly with implicit L2 learning
- Replicates findings of Grey et al. (2015) that extroversion is negatively related to implicit learning
- Contradicts Gass et al. (2013), who argue that openness and extroversion promote risk-taking behavior, thereby serving as valid, positive indicators of L2 learning success
- For emergence of rule awareness, **conscientiousness** was the only personality dimension with a significant relationship (positive correlation)
- Openness, extroversion, agreeableness, and neuroticism did **not** demonstrate a statistically significant correlation with emergence of rule awareness
- To our knowledge, no prior research examines the role of personality type in the emergence of rule awareness

## Limitations

- Computer-based laboratory study; not necessarily representative of the overall L2 population and of human interaction “in the real world”
- Participants differed widely in language backgrounds--varied from monolinguals to quadrilinguals!
- Assessment of rule awareness was based on (imperfect) participant self-reports
- Controversy surrounding the validity of the five-factor model of personality and of the Big Five personality survey

## References

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### 1. Language Background Questionnaire

- Short, computer-based survey with questions about basic demographic information and about experience with native/additional languages

### 2. Vocabulary Pre-training

- Participants introduced to artificial language articles: *gi, ro, ul, ne*
- Only instructed on near/far meaning, not on living/ nonliving meaning
- Practice through forward and backward translation tasks.

### 3. Reaction Time Task

- Two blocks of 284 rule-following trials, 44 rule-violating trials
- Trial structure:
  - fixation cross ->
  - artificial lg. article ->
  - English noun ->
  - living/ nonliving response ->
  - near/far response

### 4. Debriefing Questionnaire

- Assessed participant rule awareness through structured questionnaire with self-reported responses

### 5. Personality Survey

- Big Five personality survey
- 40 items on a 1-5 Likert scale
- Evaluated personality type according to the five-factor model of personality (John & Srivastava, 1999)