

# Handedness: where language and body meet

## Studying the effect of linguistic, cultural and bodily experiences on the conceptual metaphors

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### INTRODUCTION

According to the conceptual metaphor theory (Lakoff & Johnson, 1980), conceptual metaphors in mind have their origins in our everyday body experiences. Rested on this theory, Casasanto (2009) developed the body specificity hypothesis, which proposed that the space-valence association in mind is merely body specific. According to the body specificity hypothesis, right and left-handers form different mental representations due to different handedness. Afterward, more comparative studies between left and right-handers confirmed the body's role in the space-valence association in mind. However, the role of language is not well defined yet. It is commonly evidenced among different languages that the right side is mostly used to express positive, superior concepts like truth, the correct way, good, and importance, while the left side is allocated to inferior concepts of wrong, bad luck, and weakness. As Casasanto (2014) admitted, body and language are two ever-present contexts in our life. Therefore, it is reasonable to assume that both are involved in the construction of conceptual metaphors. Still, the studies so far have not been able to determine the role of language in space-valence association in mind.

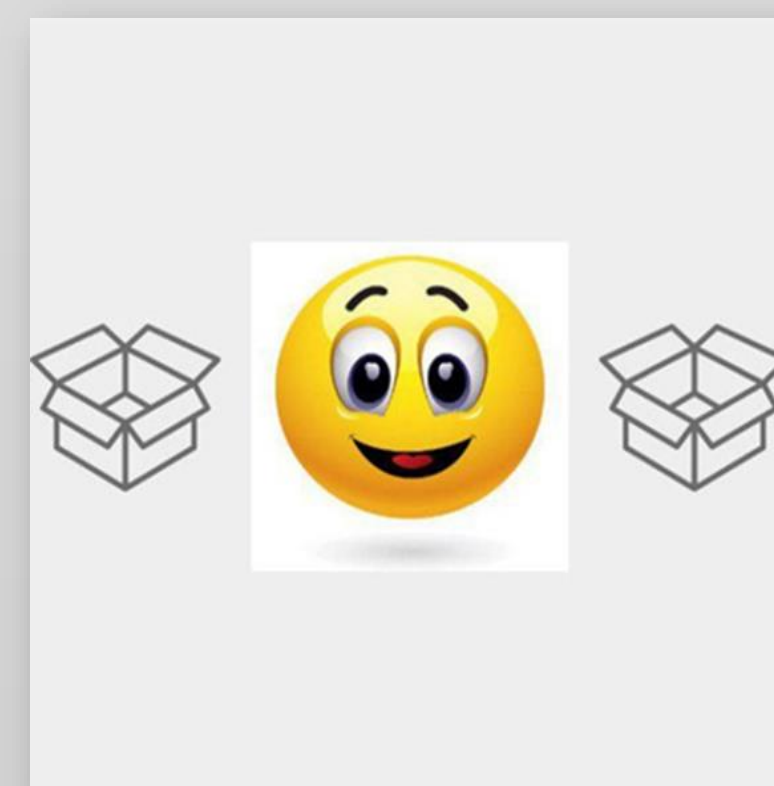
The present study explores the contribution of language, culture, and body to form conceptual metaphors in mind. To achieve this goal, I experimentally study spatial metaphors in the mind of right and left-handed participants who are exposed to languages and cultures with different levels of space-valence association. Persian, compared to English, shows a relatively stronger space-valence association. However, Iranian Sign language does not relate sides of space to positive or negative concepts. This study tends to dig into the effects of such different linguistic experiences on space-valence association in mind. Furthermore, all spoken languages and cultures tend to associate space and valence in similar patterns. Therefore, language and culture have always been considered as a united factor competing with body. Contrary to spoken languages, Sign language lacks the space-valence association. Therefore, Comparing spatial metaphors in the minds of Iranian Sign language users and Persian speakers who share a similar culture but have different language experiences will provide us a unique situation to separate the role of language and culture in shaping conceptual metaphors.

### METHOD

This experiment consists of three nonverbal computer-based tasks to evaluate the effects of language and body on the space-valence association in mind. In each task, two emotional faces in a counterbalanced order across participants are displayed on a screen. One of the faces presented a positive, and the other presented a negative emotion. Participants are asked to put the positive and negative emotional faces in the separate boxes on the horizontal axis, the vertical axis and four corners of the screen.

### THE HORIZONTAL TASK

The horizontal task explores a situation in which bodily experiences and linguistic/cultural conventions conflict. In this task, the more fluent and easier bodily experiences with the dominant hand persuade right-handers to put the positive emotion on their right side and the negative emotion on their left. Reversely, left-handers' bodily experiences lead them to put positive emotions on the left and negative emotions on the right side. However, spoken language patterns and cultural conventions provoke both right and left-handers to put the positive emotion on the right and the negative emotion on the left side.

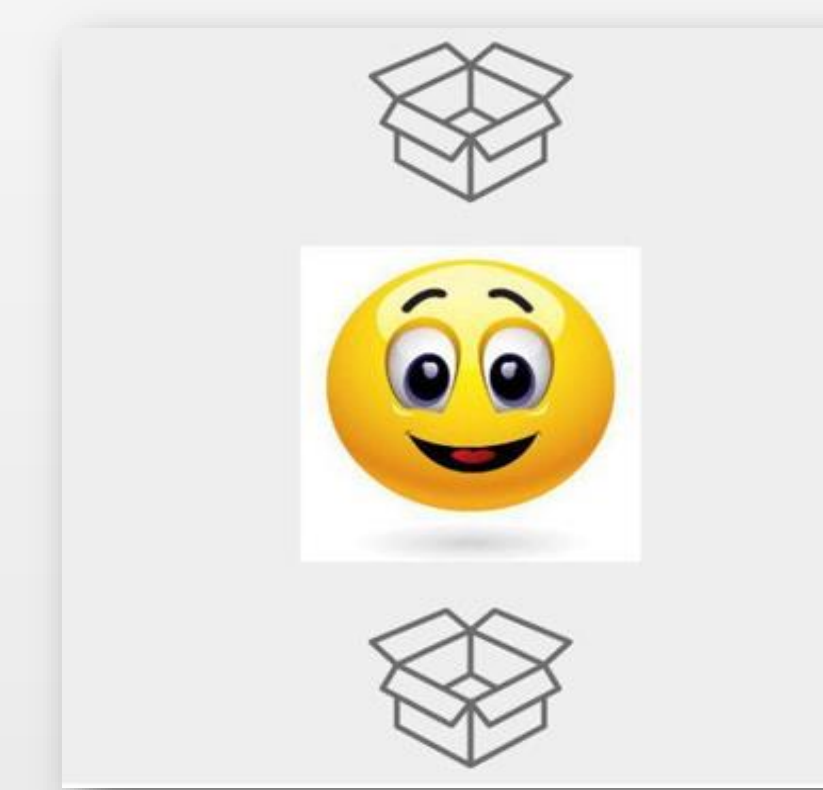


A view of the screen presented to participants in the horizontal task

### THE VERTICAL TASK

The vertical task is designed to explore a condition that both right and left-handers undergo similar body and language experiences. In this task, spoken languages' patterns and bodily experiences are compatible and support the correlation between "up" and "down" with "goodness" and "badness," respectively. The compatibility of language and body in the vertical axis-valence association leads to similar patterns in left and right-handed participants.

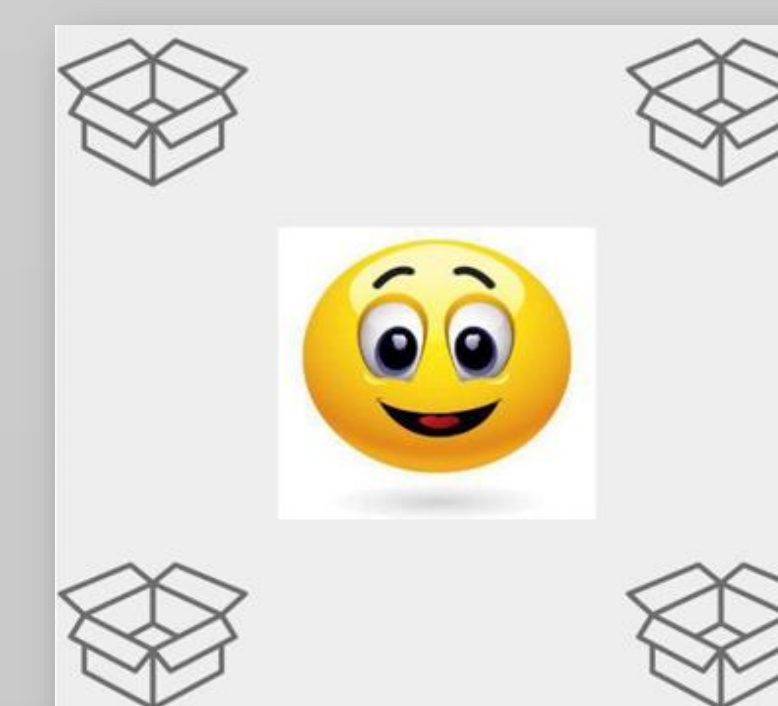
Furthermore, sign language is unbiased regarding the vertical axis-valence association. Therefore, It is expected to see different patterns in spoken languages' participants and sign language users. In this case, the result would undermine the generality of a relation between the vertical axis and valence and limit this universal to spoken languages.



A view of the screen presented to participants in the vertical task

### THE FOUR-SIDED TASK

The four-sided task is a double-checking task to explore a situation that linguistic/cultural patterns and bodily experiences come across each other in the participant's mind. In this task, both vertical and horizontal axes are available simultaneously. In this condition, the linguistic and cultural patterns "good is up" and "good is right" provoke both right and left-handed speakers to allocate the upper right box for the positive and the lower-left box for the negative emotions. On the other hand, based on body, participants tend to show different behaviors. Bodily experiences inspire them to put the positive emotion into their dominant side's top box and the negative ones into the bottom/ non-dominant box. In the case of Sign Language users, although their bodily experiences are similar to the speaking group, their language lacks a significant association between space and valence. This task enables us to understand whether language and body could reinforce or weaken each other's effect.



A view of the screen presented to participants in the four-sided task

### THE VERBAL TASK

The verbal task is a morphological task that is designed to explore the role of body and language in interpreting the new linguistic metaphors. This task consists of 18 new, unfamiliar linguistic expressions made by combining words *right* or *left* with nine familiar verbs. The participants are asked to guess the metaphorical meaning of the expressions and state whether these expressions in their mind convey positive or negative implications. The verbal task explores whether the association of space and valence in the minds of right and left-handers are similar or not. If the linguistic patterns affect the conceptual metaphors in mind, both right and left-handed participants should show identical patterns in their interpretations. On the other hand, if the body drives the spatial metaphors, It is expected that right and left-handed participants attribute opposite valence to the new expressions due to the different conceptual metaphors in their mind.

### CONCLUION

This study aimed to determine the effects of body and language on the space-valence mapping in mind. If the conceptual metaphors reflect the bodily experiences, we expect that right and left-handers would show different associations between space and valence. It means that people with different handedness, regardless of their language, form different conceptual metaphors. If the language drives the spatial metaphors, we expect that languages with different space-valence association levels form different conceptual metaphors in mind. If body and language together contribute to shaping the conceptual metaphors, different handedness experiences and linguistic patterns must increase or decrease each other's effect on the space-valence association.

### REFERENCES

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