

# Sartorial Credibility: The Influence of Attire on Statement Verisimilitude among Foreign Language Learners

George O'Neal

## Abstract

This study examined the influence of attire on the verisimilitude of a sentence for foreign language English learners. Fifty-six freshmen Japanese engineering students were divided into three equal groups of experiment participants. Each group was shown a video in which a native speaker of English says ten sentences, and each experiment participant was asked to assess how true the information expressed by the sentences was on a nine-point Likert scale. Unbeknownst to the experiment participants, the speaker is wearing different types of clothing in each video. The experiment revealed a significant relationship between certain types of attire and the verisimilitude of sentences.

**Keywords:** Sartorial symbols, clothing, credibility, verisimilitude, foreign language learners

## 1 Introduction

Tokyo tower is the same height as the Eiffel tower. Tokyo is older than New York City. Hokkaido Island is bigger than Sri Lanka. Are the previous three sentences true or false? Would the clothing of the person who said these things influence the degree to which the listener believed these things were true or false? The degree to which something seems to be true is called the degree of verisimilitude, and many studies have demonstrated that factors other than the objective truth of a statement can have a significant effect on the verisimilitude of a statement to first language listeners (Reber & Schwarz 1999; McGlone & Tofighbakhsh 2000; Schwarz 2004; Unkelbach 2007; Lev-Ari & Keysar 2010). This body of research demonstrates that many factors extraneous to the objective truth of a statement can strengthen bias and warp the perception of information among first language listeners.

However, another growing body of literature claims that cognition in a second language is different than cognition in a first language, and that this leads to subtle psychological effects. Costa, Foucart, Hayakawa, Aparici, Apesteguia, Heafner, & Keysar (2014) and Geipel, Hadjichristidis, & Surian (2015) demonstrate that processing moral

dilemmas in a second language rather than a first language leads to slightly more philosophically utilitarian decisions. Experimental findings such as these match the findings of psycholinguists who study the effects of bilingualism. Pavlenko (2012) and Keysar, Hayakawa, & An (2012) show that thinking in a foreign language reduces affective and cognitive bias. In other words, second language usage allows for more neutral and objective thinking that reduces affective bias.

Accordingly, it is possible that second language usage could mitigate the effect of affective bias that can cause some statements to seem truer than they actually are. That is, second language cognition might ameliorate bias that permeates first language cognition. This study examines the degree to which sartorial symbols, or in other words, the attire of the speaker, have an impact on the verisimilitude of English statements to native speakers of Japanese who are learning English as a foreign language. Previous research that used first language English speakers as experiment participants demonstrates that attire does have an impact on the perceived credibility of the speaker (Lavin, Davies, & Carr 2010; Sebastian & Bristow 2008). As such, this study investigates the following research questions: Does the attire of the speaker influence the degree of the verisimilitude of the speaker's English statements for native speakers of Japanese? If so, what kinds of attire have the greatest impact on the verisimilitude of English statements for native speakers of Japanese? How much effect does clothing have on the verisimilitude of English statements for native speakers of Japanese? This study hypothesizes that casual clothes (a grey hoodie and a black baseball cap) will have little to no effect on the verisimilitude of an English statement for native speakers of Japanese, that formal attire (a blue collared shirt and a grey necktie) will have a slight to small effect on the verisimilitude of an English statement for native speakers of Japanese, and that scientific paraphernalia (a white labcoat) will have a large effect on verisimilitude of an English statement for native speakers of Japanese.

## 2 Previous Literature

A growing body of literature suggests that more than just the objective truth of a statement affects the verisimilitude of a statement. In other words, the perception of a piece of information as true is affected by more than just the objective truth of the information. For instance, Reber & Schwarz (1999) claim that simple repetition seems to increase the verisimilitude of statements. These two scholars claim that the ease of processing information increases with each repetition of information, and that this effect leads to a sense that the information is slightly truer as a result.

Some research suggests that syllabic structure can have an influence on the verisimilitude of statements. McGlone & Tofiqbakhsh (2000) demonstrate that, for example, an expression like "birds of a feather flock together" sounds more truthful

and representative of universal human experience than an expression like “birds of a feather flock conjointly,” even though both expressions are semantically the same. McGlone & Tofighbakhsh (2000) claim that the greater perceived verisimilitude of certain expressions can be attributed to the syllabic rhyme of the codas, and that the syllabic rhyme matters to judgments of verisimilitude more than semantics.

Other studies have also verified that other aspects of the way in which utterances are spoken affect the verisimilitude of an utterance. Lev-Ari & Keysar (2010) demonstrate that native speakers of English oriented to the speech of native speakers of English as more credible than the speech of non-native speakers of English. Lev-Ari & Keysar (2010) attribute this difference in credibility levels to degrees of native and non-native accentedness. In an extremely worrisome conclusion, Lev-Ari & Keysar (2010) conclude that if the listener perceives the speaker to have an accent that approximates one’s own, the listener will perceive the speaker to be slightly more credible.

Other research has shown that attire affects the perception of credibility. Lavin, Davies, & Carr (2010) and Sebastian & Bristow (2008) investigated the relationship between different sets of attire and the perceived credibility of university professors among university students. They report that first language English speakers perceived professors who wore professional attire as more credible than professors who wore casual clothing. Accordingly, attire can influence the perceived credibility of a speaker.

### 3 Methods

The participants in this study were fifty-six freshmen engineering students at a large public university in Japan (mean age: 19, males: 46, females: 10). All of the students were learners of English as a foreign language. They all had learned English for at least six years before entering university. Their English abilities were sufficient to be admitted to an advanced English curriculum at the university. The fifty-six freshmen engineering students were divided into three groups for the experiment: group 1 (18 participants: 15 males & 3 females), group 2 (19 participants: 15 males & 4 females), and group 3 (19 participants: 15 males & 4 females). However, the researcher did not create the groups in each condition of the experiment. Each condition represents one class that was created by the university administration, but each class was matched for English ability as measured on a university entrance exam. Accordingly, the groups are not independent random samples; rather these three groups are samples of convenience.

The three videos for the three conditions of the experiment were created with QuickTime video recording software on an iMac inside of a quiet room against the backdrop of a blue wall. The same speaker, a middle-aged Caucasian male native speaker of English from the west coast of America who speaks English with a Californian accent, appears in each of the three videos. The independent variable in this

experiment is the clothing of the speaker in each of the three videos. In video 1, the speaker was wearing blue jeans, a grey hoodie, and a black baseball cap (see Fig. 1). In video 2, the speaker was wearing blue jeans, a grey collar shirt, and a dark colored necktie (see Fig. 2). In video 3, the speaker was wearing blue jeans, a grey collar shirt, a dark colored necktie, and a white labcoat (see Fig. 3).

Fig. 1 (attire of the speaker in video 1)



Fig. 2 (attire of the speaker in video 2)



Fig. 3 (attire of the speaker in video 3)



In each video, the speaker said the following sentences at the same pace, volume, and prosody in each of the three videos: 1) Ants sleep less than one hour a day; 2) Giraffes need less water than cows; 3) Butterflies live for about three years; 4) The tallest building in the world is in Abu Dhabi; 5) Boba birds only live on Tasmania; 6) Cats can run faster than 60 kilometers per hour; 7) The sport Tennis started in 1785; 8) Bears can sleep for five months during the winter; 9) Commodore Perry was born in New York; 10) General MacArthur was born in Los Angeles. The objective truth of these sentences is irrelevant for the purposes of this study, but each sentence is

objectively false.

The experiment participants in each group were told that the purpose of the experiment was to test how true they thought the ten sentences were. The truth of each sentence was to be evaluated on a nine-point Likert scale. One on the Likert scale represented a completely false statement, and nine on the Likert scale represented a completely true statement. Before the experiment began, the students were also shown pictures of some of the words that would appear in the sentences in order to insure that lack of vocabulary knowledge was not an independent variable. Students were shown a picture of a group of ants, a Boba bird (a Toucan bird), a butterfly, a giraffe, Commodore Perry (who is famous in Japan as the American who opened Japan up to the outside world in 1853), and General Douglas MacArthur (who is famous in Japan as the American who closed Japan down to the outside world in 1945 to begin the American occupation). The researcher spoke the words that represent each picture on the screen to each group.

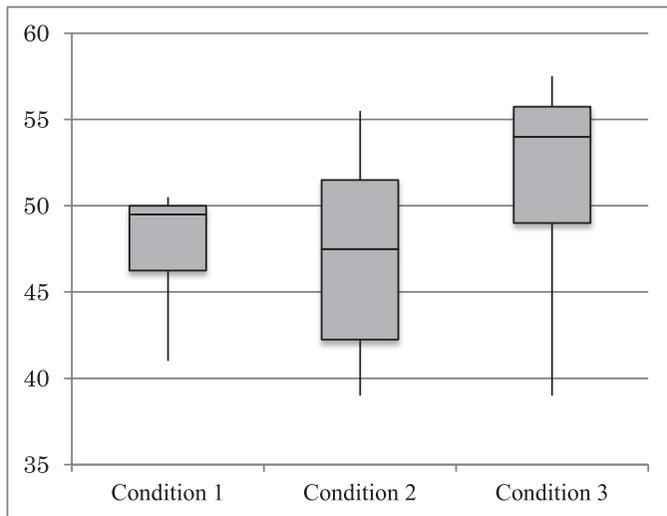
Once the experiment began, video 1 was played to group 1. This will be condition 1. Video 2 was played to group 2. This will be condition 2. Video 3 was played to group 3. This will be condition 3. The video was played on a Macintosh computer through the QuickTime program and projected on to a large white screen in the front of the rooms. The audio was played from a Bose Soundlink Bluetooth speaker at maximum volume. Students were given three practice sentences to familiarize themselves with the experimental procedure before the ten test sentences were played. After the speaker in the video said one of the sentences, the researcher stopped the video for fifteen seconds to give the experiment participants time to make their verisimilitude judgments of the sentences. At the end of the test, students were asked to answer open-ended questions designed to assess whether the students guessed the real purpose of the experiment. Students were directed in English to write whatever they wanted to answer the questions, but they were also told that they did not have to answer the questions if they did not have a guess. After the experiment was complete, the researcher gathered the answer sheets. Last, the total verisimilitude score for each student was determined by adding up the verisimilitude score assigned to each sentence. The maximum possible score was ninety points. The minimum possible score was ten points.

One participant in condition 3 failed to complete the task, and thus this participant's answers were thrown out. Furthermore, it was determined on the basis of the open-ended questions that one participant in condition 2 accurately inferred the real purpose of the experiment, and therefore this participant's answers were also thrown out. Accordingly, the sample size of group 2 and 3 dropped from 19 to 18. This had the serendipitous effect of creating equal sample sizes for groups 1, 2, and 3, which created a balanced design ( $n = 18$ ). The modified group sizes became the following: group 1 (18 participants: 15 males & 3 females), group 2 (18 participants: 14 males & 4 females), and group 3 (18 participants: 14 males & 4 females).

## 4 Results

Attire had an impact on the verisimilitude of the sentences among the young Japanese participants of this study, which reveals a sartorial bias among the experimental participants. That is, certain sartorial symbols evoke certain biases. Participants who listened to sentences from a speaker who was wearing a white labcoat, a grey collar shirt, and a necktie (condition 3) were the most credulous about the veracity of the information in the sentences ( $M = 52.44$ ,  $SD = 5.41$ ). Participants who listened to the sentences from a speaker who was wearing a baseball cap and a grey hoodie (condition 1) were more incredulous about the veracity of the information in the sentences ( $M = 48.33$ ,  $SD = 4.29$ ). Participants who listened to the sentences that were spoken by a speaker wearing a grey collar shirt and a necktie (condition 2) were the most incredulous about the veracity of the information in the sentences ( $M = 48.00$ ,  $SD = 7.26$ ).

Table 1: Box-whisker plots for verisimilitude scores for each condition



A one-way ANOVA demonstrated that these differences were statistically significant,  $F(2, 51) = 3.29$ ,  $\eta^2 = .11$ ,  $p < .05$ .

Table 2: Summary Table for the One-Way ANOVA

| Source  | SS      | df | <i>MS</i> | <i>F</i> | <i>p</i> |
|---------|---------|----|-----------|----------|----------|
| Between | 220.59  | 2  | 110.29    | 3.29     | <.05     |
| Within  | 1710.44 | 51 | 33.53     |          |          |
| Total   | 1931.03 | 53 |           |          |          |

Because the one-way ANOVA revealed a statistically significant difference, the one-way ANOVA was followed up with post-hoc tests in the form of Fisher's protected  $t$

tests. This was judged to be appropriate because only three groups are being compared, and thus only three post hoc tests are necessary. Accordingly, the difference between the mean scores of each condition were compared to a Least Significant Difference (LSD) of 3.88 to find which conditions were statistically significantly different from each other. A comparison of condition 1 ( $M = 48.33$ ) and condition 2 ( $M = 48.00$ ) revealed that the difference between the verisimilitude of the statements in condition 1 and condition 2 was not significant ( $< \text{LSD } 3.88$ ). A comparison of condition 1 ( $M = 48.33$ ) and condition 3 ( $M = 52.44$ ) revealed that the difference between the verisimilitude of the statements in condition 1 and condition 3 was significant ( $> \text{LSD } 3.88$ ). A further comparison of condition 2 ( $M = 48.00$ ) and condition 3 ( $M = 52.44$ ) revealed that the difference between the verisimilitude of the statements in condition 2 and condition 3 was significant ( $> \text{LSD } 3.88$ ). Overall, this demonstrates that the verisimilitude of the statements in condition 1 and condition 2 are significantly different from condition 3, but that the verisimilitude of the statements in condition 1 and condition 2 are not significantly different from each other.

Table 3: Summary Table for the Protected  $t$  Tests (\* indicates a significant result)

|             | Condition 2 | Condition 3 |
|-------------|-------------|-------------|
| Condition 1 | 0.33        | 4.11*       |
| Condition 2 | X           | 4.44*       |

95% Confidence Interval (CI) for the condition 1 and condition 2 difference is  $0.33 \pm 3.84$ , which includes zero and is thus not significant. 95% CI for the condition 1 and condition 3 difference, however, is  $4.11 \pm 3.84$ . Therefore, it can be stated with 95% confidence that the difference in verisimilitude scores between condition 1 and condition 3 lays between 0.27 and 7.95 verisimilitude points. That is, the difference in the total verisimilitude score of someone wearing a grey hoodie and a baseball cap and the total verisimilitude score of someone wearing a white labcoat, collared shirt, and necktie is very likely somewhere between 0.27 to 7.95 additional verisimilitude points. Furthermore, 95% CI for the condition 2 and condition 3 difference is  $4.44 \pm 3.84$ . Therefore, it can be stated with 95% confidence that the difference in verisimilitude scores between condition 2 and condition 3 lays somewhere between 0.60 and 8.28 credibility points. In other words, the difference in the total verisimilitude score of someone wearing a collared shirt and a necktie and the total verisimilitude score of someone wearing a white labcoat, collared shirt, and necktie is very likely somewhere between 0.60 to 8.28 additional verisimilitude points.

## 5 Discussion

The results of this study seem to demonstrate that the paraphernalia of science has an effect on the verisimilitude of sentences and on the credibility of the speaker. A comparison of the verisimilitude scores of sentences spoken by someone wearing the accouterments of science with the verisimilitude scores of the same sentences spoken by the same person wearing casual clothing or formal wear reveals that the sentences spoken by someone who wears the sartorial symbols of scientific endeavor are oriented to as more believable and true. This would seem to indicate that certain types of attire affect the credibility of the speaker, which is consistent with previous research conducted among first language speakers (Lavin, Davies, & Carr 2010; Sebastian & Bristow 2008). The results of this study suggest that the same effect is in play among foreign language speakers as well. Indeed, experiment participants seemed to orient to speakers who wore the clothing of science as more credible. Furthermore, the results of this study also suggest that certain types of attire affect the verisimilitude of sentences, although the experimental procedure of this study makes it impossible to disentangle the effect of the experimental manipulation on the credibility of the speaker and on the verisimilitude of the sentences. Be that as it may, the sentences uttered by speakers who wore the white lab coat seemed to be truer to the experiment participants.

However, the conclusion that sartorial bias affects the credibility of the speaker and the verisimilitude of sentences needs to be qualified. The fact that the effect size ( $\eta^2$ ) only equals 0.11 means that only 11% of the total variance of the verisimilitude scores is accounted for by the independent variable, which in this study is the clothing of the speaker. Therefore, it cannot be said that clothing has a huge effect on verisimilitude scores. 89% of the total variance of the credibility scores emerges from other variables. Accordingly, although this study demonstrates that sartorial bias exists among foreign language learners, the effect of sartorial bias is not large. Rather, sartorial bias is another in a series of subtle biases which probably all humans, whether first language speakers or second language speakers, have.

Last, this study does not actually contend with the question of whether second language cognition ameliorates bias that could be attributed to sartorial symbols. No control group was provided to address this question. The experimental subjects in this study were only foreign language learners. However, the results of this study do indicate that sartorial bias is still present among the experimental participants in this study. This finding does not definitively prove that second language cognition fails to prevent sartorial bias, but it does indicate that second language cognition does not completely inhibit sartorial bias.

### Acknowledgments

I would like to thank Elizabeth Bauer for help with my statistics.

## 6 References

- Costa, A., Foucart, A., Hayakawa, S., Aparici, M., Apesteguia, J., Heafner, J., & Keysar, B. (2014). Your morals depend on language. *PLoS*, *9*(4), 1-7.
- Geipel, J., Hadjichristidis, C., & Surian, L. (2015). How foreign language shapes moral judgment. *Journal of Experimental Social Psychology*, *59*, 8-17.
- Keysar, B., Hayakawa, S., & An, S. (2012). The foreign-language effect: Thinking in a foreign tongue reduces decision biases. *Psychological Science*, *23*, 661-668.
- Lavin, A., Davies, T., & Carr, D. (2010). The Impact Of Instructor Attire On Student Perceptions Of Faculty Credibility And Their Own Resultant Behavior. *American Journal of Business Education*, *3*(6), 51-62.
- Lev-Ari, S., & Keysar, B. (2010). Why don't we believe non-native speakers? The influence of accent on credibility. *Journal of Experimental Social Psychology*, *46*, 1093-1096.
- McGlone, M., & Tofiqbakhsh, J. (2000). Birds of a feather flock conjointly (?): Rhyme as Reason in Aphorisms. *Psychological Science*, *11*(5), 424-428.
- Pavlenko, A. (2012). Affective processing in bilingual speakers: Disembodied cognition? *International Journal of Psychology*, *47*(6), 405-428.
- Reber, R., & Schwarz, N. (1999). Effects of perceptual fluency on judgments of truth. *Consciousness and Cognition: An International Journal*, *8*, 338-342.
- Schwarz, N. (2004). Metacognitive Experiences in Consumer Judgment and Decision Making. *Journal of Consumer Psychology*, *14*(4), 332-348.
- Sebastian, R., & Bristow, D. (2008). Formal or Informal? The Impact of Style of Dress and Forms of Address on Business Students' Perceptions of Professors. *Journal of Education for Business*, *83*(4), 196-201.
- Unkelbach, C. (2007). Reversing the Truth Effect: Learning the Interpretation of Processing Fluency in Judgments of Truth. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *33*(1), 219-230.