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Extended Abstract

Experiment on selecting evaluation words for sensory evaluation of beautiful gait

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Abstract

"Beautiful gait" which is an elegant walk with correct posture has been popular mainly among women. In addition to the exercise effect during walking, a beautiful gait has the effect of improving mental health by being seen to be beautiful by others. However, the standard of beauty is not definite. Therefore, in this study, as the first step to clarify the relation between biomechanical factors, such as joint angles and joint moments during walking, and psychological factors when a person evaluates beauty, we examined the evaluation criteria of "beautiful" for "beautiful gait". The result indicated that the evaluators felt "Beautiful" when they felt "Like", "Couth," "Stable," and "Calm".

Keywords

Adjectives, Beautiful, Correlation coefficient, Gait, Health

1. Introduction

"Beautiful gait"[1] which is an elegant walk with correct posture has been popular mainly among women. In addition to the exercise effect during walking, a beautiful gait has the effect of improving mental health by being seen to be beautiful by others. Therefore, it can be expected to be accepted by many people as an exercise style that supports physical and mental health. However, the standard of beauty is not definite. Therefore, in this study, as the first step to clarify the relation between biomechanical factors, such as joint angles and joint moments, during walking [2] and psychological factors when a person evaluates beauty, we examined the evaluation criteria of "beautiful" for "beautiful gait" by deriving the correlation coefficient[3] between the evaluation words that the evaluators who watched "beautiful gait" answered in the questionnaire.

2. Experiment of selecting evaluation words

We collected about 400 adjectives with reference to the literature [1] and dictionaries on "beautiful gait." Seven participants evaluated whether the collected adjectives were appropriate for evaluating "beautiful gait" using three choices (1: Applicable 2: Neither 3: Not applicable). Then, the number of selected adjectives were narrowed down from about 400 words to 146 words by deleting adjectives with an average evaluation score of 2.5 or higher. Furthermore, 146 adjectives were separated into 13 groups. The adjectives belonging to the same group had similar meanings. An adjective with the lowest evaluation score in each group was used as the representative word. We excluded the adjectives such as "Dirty" and "Hard which were not appropriate words to evaluate "beautiful gait" from the 13 representative words. In addition, we added "Like", "Fast", and "Wide stride" as evaluation words. "Like" indicates a personal preference. "Fast" and "Wide stride" indicate physical quantities. Finally, the thirteen words including "Like", "Beautiful", "Couth", "Fast", "Wide stride", "Sharp", "Bright", "Gentle", "Stable", "Without strain", "Soft", "Calm," and "Elegant" were selected. We decided the antonyms on the selected 13 words and constructed each evaluation word pair.

3. Subjective evaluation experiment

We asked 34 evaluators including men and women to watch the video [4] of "beautiful gait" and conducted a questionnaire survey on the "beautiful gait" using the selected evaluation words. The evaluators answered 1 to 5 for each evaluation word (1: Very XXX 2: Slightly XXX 3: Neither 4: Slightly 000 5: Very000). Fig.1 shows the evaluation sheet used in the experiment.



Fig.2 Boxplot of questionnaire results

4. Result

4.1 Average and median values

Fig.2 shows the boxplot of questionnaire results. The average value for all evaluation words was 3.49. We assumed that 3.8 or more was a high evaluation and less than 3.0 was a low evaluation. The evaluation words with an average value of 3.8 or more were "Beautiful", "Couth", "Bright", and "Elegant". The differences between the averages and medians of these four words were less than 0.5. In addition, the standard deviations of "Beautiful", "Bright", and "Elegant" were less than 1.0. The results indicate that most of the evaluators felt "Beautiful", "Bright", and "Elegant" when they watched the beautiful gait video.

4.2 Correlation coefficients between evaluation words

Table1 shows the correlation coefficients

between evaluation words. Focusing on the results having correlation coefficients of 0.6 or more, there were positive correlations between "Beautiful" and "Like", "Couth", "Stable", "Calm". Because the differences between the averages and medians of "Beautiful" and "Calm" were less than 0.5 and their deviations were less than 1.0, most of the evaluators might have felt "Beautiful" at the same time as they felt "Calm". There were positive correlations between "Like" and "Couth", "Stable". There were also positive correlations between "Couth" and "Stable". Although not all the evaluators felt "Like" and "Stable" when they felt "Couth", the result suggests that "Like" and "Stable" might be closely related to "Couth".

5. Conclusion

In this study, we concluded that "Like", "Couth," "Stable," and "Calm" are related to "Beautiful". We will verify what postures and movements are related to "Like", "Couth," "Stable," and "Calm" in terms of biomechanical factors in future work.

REFERENCES

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	Like	Beautiful	Couth	Fast	Wide stride	Sharp	Bright	Gentle	Stable	Without strain	Soft	Calm	Elegant
Like	1	-	-	-	-	-	-	-	-	-	-	-	-
Beautiful	0.671	1	-	-	-	-	-	-	-	-	-	-	-
Couth	0.683	0.667	1	-	-	-	-	-	-	-	-	-	-
Fast	0.238	0.432	0.294	1	-	-	-	-	-	-	-	-	-
Wide stride	0.386	0.545	0.375	0.628	1	-	-	-	-	-	-	-	-
Sharp	0.494	0.397	0.177	0.303	0.256	1	-	-	-	-	-	-	-
Bright	0.392	0.381	0.256	0.353	0.151	0.587	1	-	-	-	-	-	-
Gentle	0.387	0.345	0.402	0.242	0.509	0.263	0.290	1	-	-	-	-	-
Stable	0.732	0.772	0.639	0.437	0.570	0.383	0.228	0.470	1	-	-	-	-
Without strain	0.628	0.545	0.498	0.250	0.386	0.356	0.367	0.706	0.612	1	-	-	-
Soft	0.347	0.250	0.214	0.196	0.386	0.349	0.268	0.333	0.314	0.628	1	-	-
Calm	0.463	0.660	0.568	0.195	0.452	0.097	0.299	0.563	0.622	0.708	0.415	1	-
Elegant	0.309	0.395	0.510	0.358	0.351	0.217	0.279	0.286	0.267	0.333	0.206	0.423	1

Table1 Correlation coefficients between the evaluation words