

# Waiting Behavior

## Aggressiveness and Waiting time

待ち行動  
攻撃性と待ち時間

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本研究の目的はパーソナリティ要因としての攻撃性と状況要因としての待ち時間が女子学生の待ち行動に及ぼす効果を検討することであった。2つの質問紙、Buss-攻撃性質問紙の日本語バージョンと待ち行動質問紙が女子学生に実施された。待ち行動質問紙に関しては、学生は異なった待ち時間を含む3つの仮想的な待ち場面に3件法で応答した。本研究は仮想的な待ち場面をリアルな待ち場面に近づけた。主な結果は以下の通りであった。5分条件と30分条件では、高短気条件と低短気条件の間に有意な差は認められなかった。しかしながら、60分条件では低短気条件が高短気条件よりも待ち得点が高かった。

キーワード；待ち行動、攻撃性、待ち時間

The purpose of the present study was to investigate the effect of aggressiveness as a personality factor and waiting time as the situational factor on the waiting behavior among female adolescent students. Two questionnaires, the Japanese version of the Buss-Aggression Questionnaire and a waiting questionnaire were administered to female adolescent students. Regarding the waiting questionnaire, the students responded to three hypothetical waiting situation involving different waiting times (5,30, or 60 minutes) on the 3-point scale (wait, not sure, do not wait). The present study approached the hypothetical waiting situation to the real waiting situation. The main results indicated that the for the 5 or 30 minute condition, no significant difference was observed between H irritability and L irritability group for waiting behavior, but that for 60 minute condition L irritability group had the higher waiting scores than H irritability group.

Key words ; waiting behavior, aggressiveness, waiting time.

To investigate the effects of situational factors on waiting behavior, a series of studies (Mitsutomi & Kobayashi, 2012; Mitsutomi & Kobayashi, 2014; Mitsutomi, Kobayashi & Fukuhara, 2015) were conducted in which female university students would wait for a waiting object in a variety of hypothetical waiting situations. As a result, some situational factors were found to affect waiting behavior.

First, regarding the waiting place, a bookshop condition, which associated with number distractions resulted in higher waiting scores than a park condition, which produces reflectively few distractions. Second, regarding waiting time, a longer waiting time resulted in the lower waiting scores.

Previous study has primarily focused on situational factors. However, to investigate the way in which personality factors interact with situational factors, it is necessary to examine not only situational factors such as waiting place and waiting time, but also personality factors that influence waiting behavior. In the Mitsutomi & Kobayashi (2016), we conceptualized aggressiveness as a personality factor and both waiting place and waiting time as situational factor. Next, we investigated the interaction between aggressiveness and both waiting place and waiting time

However, no interpretable interaction effect was obtained. We investigated the interaction between aggressiveness and both waiting place and waiting time, using the hypothetical situation.

To investigate interaction between aggressiveness and both waiting place and waiting time, it is necessary to investigate this problem in the real waiting situation. However, it is difficult to set the real waiting situation and investigate the research.

Therefore, we considered the following two points and approached the hypothetical waiting situation to the real situation. The first point is to add the waiting story written in the letters to the picture ( See, Fig. 1-4). The second point is to have the waiting subject choose the one among the five frustration sentiments and to have waiting subjects say it to the person that let wait (See, Fig. 4). Thus, subjects were actively participated in the waiting story.

The present study focused on the aggressiveness as the personality and the waiting time as the situational factor. Therefore, the purpose of the present study was to investigate the effects of aggressiveness and waiting time on the waiting behavior in the female adolescent.

## Method

The experiment featured a  $2 \times 3$  factorial design. The first factor was the degree of aggressiveness and consisted of an H and L aggressiveness groups. The second factor was waiting time and consisted of the following three waiting times.; 5, 30, or 60 minutes.

The Japanese version of the Buss-Perry Aggressiveness Questionnaire (BAQ), which was devised by Ando, Soga, Yamasaki, Shimada, Utsuki, Oashi & Sakai (1999) was administered to female adolescents. The Japanese version of the BAQ incorporates four subscale-irritability, hostility, physical aggressiveness, and verbal aggressiveness consisting of five, six, six and five items, respectively.

Waiting questionnaire was shown in the supplement. This is the example of 5-minute. For the 30-minute and the 60-minute, we changed waiting time from the 5-minute to the 30-minute or 60-minute.

53 female adolescent students participated in this study. These students were students of dental hygienist special school.

## Results

Subjects were classified into a high group with scores above the median and a low group below the median in each subscale for the aggressiveness.

Waiting behavior

## Hostility

Table 1 Results of hostility

Hostility					
H			L		
5-minute	30-minute	60-minute	5-minute	30-minute	60-minute
1.93	1.27	0.50	2.00	1.48	0.83

The H hostility group had significantly higher hostility scores than L hostility group. Table1 shows the mean waiting scores for the H and L hostility groups. Using the waiting scores as the dependent variable, ANOVA was performed as follows: 2 (hostility)  $\times$  3 (waiting time). The main effect of the waiting time ( $F=83.12$ ,  $df=2/102$ ,  $p<.0:1$ ) was significant. The 5-minute waiting condition resulted in higher waiting scores than the other two condition (30 minute,  $t=5.92$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=12.99$ ,  $df=102$ ,  $p<.01$ ) and the 30-minute waiting condition resulted in the higher waiting scores than 60-minute waiting condition ( $t=7.07$ ,  $df=102$ ,  $p<.01$ ).

## Physical aggressiveness

Table 2 Results of physical aggressiveness

Physical aggressiveness					
H			L		
5-minute	30-minute	60-minute	5-minute	30-minute	60-minute
1.96	1.18	0.56	1.92	1.53	0.73

High physical aggressiveness group significantly had higher physical aggressiveness scores than L physical aggressiveness group. Table 2 shows the mean waiting scores for the H and L physical aggressiveness groups. Using the waiting scores as the dependent variable, ANOVA was performed as follows: 2 (physical aggressiveness)  $\times$  3 (waiting time). The main effect of the waiting time was significant ( $F=93.25$ ,  $df=2/102$ ,  $p<.01$ ) The 5-minute waiting condition resulted in higher waiting scores than the other two condition (30-minute,  $t=6.09$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=13.63$ ,  $df=102$ ,  $p<.01$ ) and the 30-minute waiting condition resulted in the higher waiting scores than 60-minute waiting condition ( $t=7.53$ ,  $df=102$ ,  $p<.01$ )

## Verbal aggressiveness

Table 3 Results of verbal aggressiveness

Verbal aggressiveness					
H			L		
5-minute	30-minute	60-minute	5-minute	30-minute	60-minute
1.92	1.34	0.62	1.96	1.37	0.66

The H verbal aggressiveness group had the higher verbal aggressiveness scores than the L verbal aggressiveness group. Table 3 shows the mean waiting scores for the H and L verbal aggressiveness groups. Using the waiting scores as the dependent variable, ANOVA was performed as follows: 2 (verbal aggressiveness)  $\times$  3 (waiting time). The main effect of waiting time was significant ( $F=89.80$ ,  $df=2/102$ ,  $p<.01$ ). The 5-minute waiting condition resulted in the higher waiting scores than the other two conditions (30-minute,  $t=6.01$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=13.38$ ,  $df=102$ ,  $p<.01$ ) and the 30-minute waiting condition resulted in the higher waiting scores than the 60-minute waiting condition ( $t=7.37$ ,  $df=102$ ,  $p<.01$ ).

## Irritability

Table 4 The results of irritability

Irritability					
H			L		
5 minute	30-minute	60-minute	5-minute	30-minute	60-minute
2.00	1.26	0.36	1.87	1.49	0.91

The H irritability group significantly had the higher irritability scores than the L irritability group. Table 4 shows the mean waiting scores for the H and L irritability groups. Using the waiting scores as the dependent variable, ANOVA was performed as follows: 2 (irritability)  $\times$  3 (waiting time). The main effect of waiting time was significant ( $F=99.35$ ,  $df=2/102$ ,  $p<.01$ ). The 5-minute waiting condition resulted in the higher waiting time than the other two conditions (30-minute,  $t=6.15$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=14.18$ ,  $df=102$ ,  $p<.01$ ) and the 30-minute condition resulted in the higher waiting scores than the 60-minute waiting condition ( $t=8.02$ ,  $df=102$ ,  $p<.01$ ).

The interaction effect between irritability and waiting time was significant ( $F=6.75$ ,  $df=2/102$ ,  $p<.01$ ) Simple main effect of irritability was analyzed for each waiting time

condition. The simple main effect of irritability was significant for the 60-minute waiting condition and L irritability group resulted in the higher waiting scores than H group ( $F=10.81$   $p<1/153$ ,  $p<.01$ ).

The simple main effect of waiting time was analyzed for each irritability group. The simple main effect of waiting time were significant for the both groups (irritability H,  $F=78.43$ ,  $df=2/102$ ,  $p<.01$ ; irritability L,  $F=27.24$ ,  $df=2/102$ ,  $p<.01$ ). For the L irritability group, the 5-minute condition resulted in the higher waiting scores than the other two conditions (30-minute,  $t=6.04$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=13.75$ ,  $df=102$ ,  $p<.01$ ) and the 30-minute condition resulted in the higher waiting scores than 60-minute condition ( $t=7.42$ ,  $df=102$ ,  $p<.01$ ). For the H irritability group, the 5-minute waiting condition resulted in the higher waiting scores than the other two condition (30-minute,  $t=2.82$ ,  $df=102$ ,  $p<.01$ ; 60-minute,  $t=6.90$ ,  $df=102$ ,  $p<.01$ ) and 30-minute waiting condition resulted in the higher waiting scores than 60-minute condition ( $t=4.07$ ,  $df=102$ ,  $p<.01$ ).

## Discussion

The present study was to investigate the effects of aggressiveness as the personality and waiting time as the situational factor on the waiting behavior. For the four subscales, the main effect of waiting time was significant. The 5-minute waiting condition resulted in the higher waiting scores than other two conditions and 30-minute waiting condition resulted in the higher waiting scores than 60-minute condition. This result suggests that with the increasement of the waiting time, the waiting scores decrease.

An interaction effect between the irritability and waiting time was significant. The results indicated that in the 5-minute and 30-minute, significant difference between H irritability group and L group was not observed, but that for the 60-minute condition, L irritability group resulted in the higher waiting scores than the H group. Thus, we could obtain the interaction effect between irritability as the personality factor and waiting time as the situational factor.

However, Mitsutomi & Kobayashi (2016) can not find the interpretable interaction effect between aggressiveness and waiting time. Mitsutomi & Kobayashi (2016) used the hypothetical situations. On the other hand, the present study approached the hypothetical situation to the real situation, with considering the following two points. The first point added the waiting story written in letters to the picture (See, Fig.1-4). The second point is to have the waiting subject choose the one among the five

frustration sentiments and have the waiting subjects say it to the person that let wait (See, Fig. 4). Thus, subjects were actively participated in the waiting story.

If we used this method, the interaction effect between personality and situational factor might be observed. However, regarding the three subscales, i.e., hostility, physical aggressiveness and verbal aggressiveness, the interaction effects were not observed. These variables might not have relationship to the waiting behavior.

In the present study, we have the waiting subject choose the one among the five frustration sentiments (See, Fig.4) . However, we did not investigate the relationship between the frustration sentiments that the subjects chose and waiting behavior. It is necessary to investigate this relationship. It is necessary to investigate whether with the increase of waiting time, the strength of frustration increase. It is also necessary whether in the 60 minute condition L irritability group had lower strength of frustration than H irritability group.

## References

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# Supplement



この調査は皆さんの待つという行動を調べるものです。深く考えないで、率直な意見をお聞かせ下さい。

なお、質問項目の中に公園という言葉が出てきますが、ここでいう公園にはベンチしか置かれていません。

1. あなたは、公園で親しい女性と会う約束をしています。



Fig.1. The example of the five minute condition

2. あなたは、公園で親しい女性を待っています。



Fig.2. The example of the five minute condition

3. 約束の時間から5分がすぎました。しかし、親しい女性は、まだ来ません。

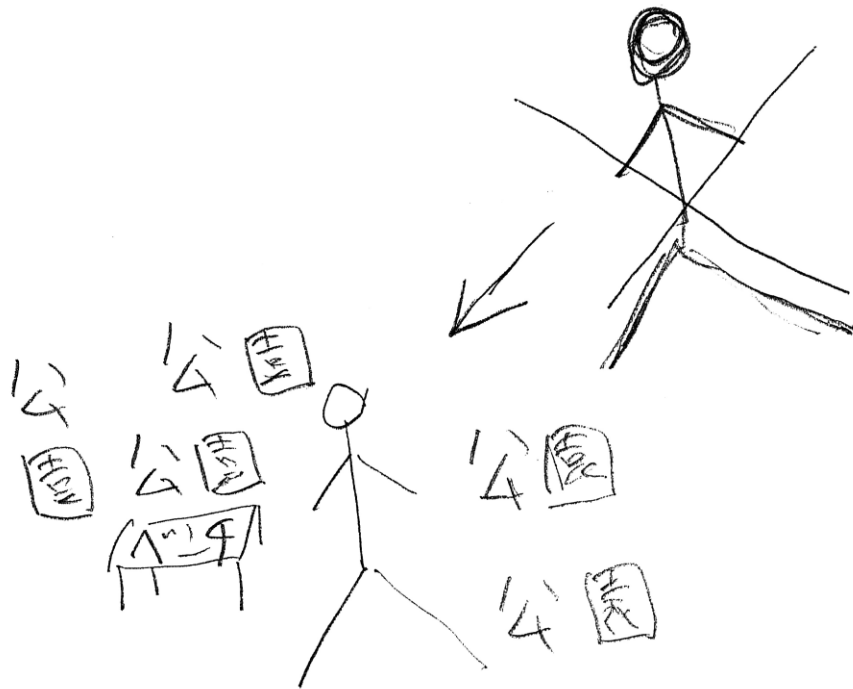


Fig.3. The example of the five minute condition

4. 公園で5分待たせている親しい女性に何か言ってください。  
下の文章の中から、1つ選びその番号にマルをつけてください。

- |                      |   |
|----------------------|---|
| たったこれくらいへっちゃらだい。     | 1 |
| こんなに待たせやがって、ばかやろう。   | 2 |
| 人の時間を何だと思ってんだ。ばかやろう。 | 3 |
| そんなにきつくないよ。          | 4 |
| もう疲れた                | 5 |

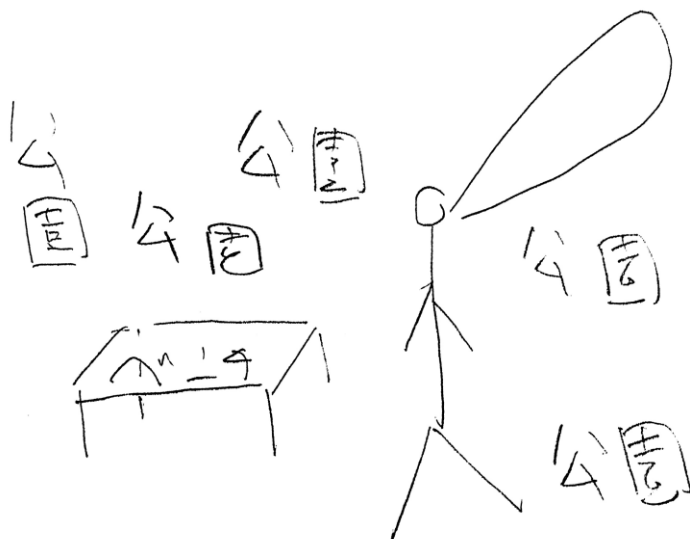


Fig.4. The example of the five minute condition

5. あなたは、あなたを公園で5分待たせている親しい女性をもっと待ってみますか。

- |          |   |
|----------|---|
| 待たない     | 1 |
| わからない    | 2 |
| もっと待ってみる | 3 |