Effects of cognitive strategies on behavioral intentions towards strangers: A conceptual replication of Shimizu, Nakashima, and Morinaga (2016)\textsuperscript{1}

Haruka SHIMIZU\textsuperscript{1),*}, Kazuaki ABE\textsuperscript{2)}, Ken’ichiro NAKASHIMA\textsuperscript{2)}

\textsuperscript{1)}Japan Society for the Promotion of Science
\textsuperscript{2)}Hiroshima University

Abstract
Shimizu, Nakashima, and Morinaga (2016) reported that tendencies consistent with defensive pessimism (DP) are positively associated with considerate and respectful behavioral intentions toward strangers. However, two limitations hinder the generalizability of their findings: (1) their participants were exclusively female students of a women’s junior college, and (2) the cognitive strategy scale used in their study did not take all four types of cognitive strategy; i.e., DP, strategic optimism (SO), realistic pessimism (RP), and unjustified optimism (UO), into consideration. We replicated Shimizu et al. (2016) with adult respondents and used a different scale to enhance the generalizability of the results. Japanese adults (\(N=337\)) participated in an online survey. Path analysis of their responses indicated that a relationship exists between DP and behavioral intentions, which was consistent with the findings reported by Shimizu et al. (2016). The study also produced exploratory evidence that individuals that exhibit UO show less considerate and respectful behavioral intentions in interpersonal contexts than those who display SO or RP.

Key Words: cognitive strategy, interpersonal behavior, conceptual replication

Introduction
Defensive pessimism (DP) is a cognitive strategy in which individuals hold low expectations about important events such as taking exams despite past success in similar situations. There are four types of cognitive strategies, including DP that can be categorized according to the recognition of past performance (past recognition) and the level of expectation of future performance (future expectation). These strategies include (1) DP, in which individuals have high past recognition but low future expectations; (2) strategic optimism (SO), in which individuals have high past recognition but low future expectations; (3) realistic pessimism (RP), in which individuals have low past recognition and low future expectations; and (4) unjustified optimism (UO), in which past recognition is low, but future expectations are high (Mitsunami, 2012; Norem, 2001).

Past studies have demonstrated that the trait of pessimism is related to a variety of negative factors including academic performance and interpersonal relationships, as well as to negative physical and mental health (e.g., Carver, Scheier, & Segerstorm, 2010). DP is regarded as antithetical to these findings because research on DP suggests that pessimism is not always negative, at least in academic...
situations. However, the applicability of DP to interpersonal situations has not been thoroughly established because the focus of past studies has almost exclusively been on the academic context, and only a few studies have examined DP in an interpersonal context (e.g., Mitsunami, 2012). Therefore, a thorough examination of the role of DP in these broader settings is needed to establish it as an antithetical to pessimism.

We aimed to explain and predict social behavior from the perspective of cognitive strategies beyond the academic context. Therefore, it is also necessary to accumulate information from interpersonal situations that might affect individual adaptations (Okubo, 2005) as well as behavior in task-related situations. Therefore, Shimizu, Nakashima, and Morinaga (2016) conducted a survey using a hypothetical scenario involving interactions with strangers. They reported that individuals with pronounced DP tendencies simultaneously manifested considerate and respectful behavioral intentions and high levels of anxiety in their interactions with strangers.2)

However, the work of Shimizu et al. (2016) has two severe limitations. First, all the participants were female junior college students, which made the generalizability of the results difficult. Second, the authors used the Defensive Pessimism Scale (Miyachika, 2005) to assess the level of DP tendency. The score of this scale reflects the levels of DP tendency; however, it only allows the comparison between DPs and SOs. The current study used the Japanese version of the Defensive Pessimism Questionnaire (J-DPQ; Hosogoshi & Kodama, 2005), which is a Japanese translation of the Defensive Pessimism Questionnaire developed by Norem (2001) to overcome this limitation. The J-DPQ, similar to Miyachika’s Defensive Pessimism Scale, provides information regarding DPs and SOs. However, the J-DPQ also includes an additional item related to past performance, which helps discriminate between DPs and RPs, as well as between SOs and UOs (Norem, 2001).

In this study, we re-examine the relationships between DP tendency, state anxiety, and behavioral intention in adult Japanese participants. We also sought insights into differences in behavioral intentions when meeting strangers that could be attributed to the four different cognitive strategies.

Method

Participants and procedures

We recruited Japanese adults in their 20s and 30s (N=337, 170 males, $M_{age}=30.8, SD=5.0$) through an internet survey company in Japan (Cross Marketing Inc., Tokyo, Japan). An online survey was conducted using procedures outlined by Shimizu et al. (2016). Participants completed scales assessing their cognitive strategies, trait self-esteem, trait shyness, and social skills. Then, the participants read a hypothetical scenario in which they had an opportunity to talk with prospective colleagues at a party. Following this, the participants rated their state anxiety, and behavioral intentions, related to the situation they read.

Measures

We used the J-DPQ (Hosogoshi & Kodama, 2005) to assess the cognitive strategies. Participants responded to statements regarding what they thought about, and how they prepare for a critical situation using a 7-point scale. The J-DPQ included one historical item inquiring whether the participant had done well in the past under similar situations.

We also used the Trait Shyness Scale (16 items; Aikawa, 1991) and the Japanese version of Rosenberg’s Self-Esteem Scale (10 items; Yamamoto, Matsui, & Yamanari, 1982), similar to Shimizu et al. (2016). We also used Kikuchi’s Scale of Social Skills (18 items; Kikuchi, 1988) to assess factors related to the participant’s social skills. Responses to each item of this scale are made by using a 5-point scale.

We used the state anxiety subscale of the Japanese Version of the State-Trait Anxiety Inventory (STAI; Shimizu & Imae, 1981; 19 items) to assess state anxiety in situations described in each scenario. Moreover, we used 22 behavioral descriptions that can be observed in conversations with others (see Table 2 in Shimizu et al., 2016) to assess behavioral intentions. This behavioral intention scale consists of three subscales: considerate behavior, respectful behavior, and extroversion behavior. Considerate behavior includes

2) Following the terminology of Norem (2001), a high DPQ score is expressed here as a tendency towards high DP; however, it may be appropriate to express it as “reflection and pessimistic thinking.” In fact, another study (Shimizu, Nakashima, & Morinaga, 2019) describes it in these terms (i.e., as “reflection and pessimistic thinking”). In the current study, the expression in Norem (2001) is used, respecting the fact that this is a replication study of Shimizu et al. (2016).
behavioral intentions that consider the reactions of others, which are assessed by items such as, “When engaging in conversation, I am conscious of others’ reactions.” Respectful behavior includes behavioral intentions that respect others’ opinions, which are assessed by items such as, “I respect others’ opinions and views that differ from my own.” Extroversion includes intentions for active behaviors, which are assessed by items such as, “I take the initiative to introduce myself to people around me.” Each item of the scale is rated on a 6-point scale (See Electronic Appendix 1 for details of the measures).

Results

Data of all the participants were included in the analyses with no missing values (Raw data are provided in the Electronic Appendix 2 to this paper). We first calculated the mean scores of each scale following previous studies, except the historical item in the J-DPQ. We then used the mean J-DPQ scores, the historical item score, and the interaction term of these scores as independent variables to explore the relations between the four types of cognitive strategies and behavioral intentions.

We conducted path analysis based on structural equation modeling to investigate the effects of the cognitive strategy on behavioral intentions (See Electronic Appendix 3 for more information). We first selected paths that were significant in the model described by Shimizu et al. (2016). For example, we set paths among the J-DPQ score and anxiety, and the J-DPQ score and considerate behavior. Next, we set all potential paths for the historical item score, the interaction term, and social skills (mean-centered). Based on these settings, we ran the first path analysis and deleted non-significant paths in the model. We then ran a second analysis using only the significant paths from the first model. We used the second results as our final model (CFI=.98, RMSEA=.09, SRMR=.03; Figure 1).

The main purpose of this study was to confirm the relationships between the tendency toward DP, state anxiety, and behavioral intentions. As shown in Figure 1, the J-DPQ score was positively associated with considerate behavior (β=.17, p<.001), respectful behavior (β=.19, p<.001), and state anxiety (β=.13, p<.001). Moreover, state anxiety was negatively associated with extroversion (β=-.21, p<.001). Therefore, this study replicated the relationships between the J-DPQ scores, state anxiety, and behavioral intentions in Shimizu et al. (2016).

Furthermore, the interaction term between the J-DPQ score and the historical item was negatively associated with considerate behavior (β=-.14, p<.002), and respectful behavior (β=-.21, p<.001). We conducted simple slope analyses using multiple regression method on each behavioral intention score to examine the pattern of the interactional effects. Results of the analyses of considerate and respectful behavior in individuals with low J-DPQ scores (−1SD) indicated that the historical item was positively associated with behavioral intention (considerate behavior; β=.15, p=.03, respectful behavior; β=.26, p<.001). Moreover, the J-DPQ score was positively associated with behavioral intention (considerate behavior; β=.24, p<.001, respectful behavior; β=.29, p<.001) among participants.

Figure 1 The relations between cognitive strategies, state anxiety, and behavioral intentions.
Note. Standardized coefficients were expressed. Error terms and covariances are omitted from the figure.
with low historical item scores. In both analyses, there were neither a significant simple slope effect of the historical item nor a significant simple slope effect of the J-DPQ scores among individuals with high scores for the historical item. Individuals with low scores for both the J-DPQ and the historical item—who were classified as UOs—yielded the lowest scores for both behavioral intentions.

**Discussion**

The relationships between J-DPQ scores, state anxiety, and behavioral intentions in this study replicated the findings of Shimizu et al. (2016) because participants who displayed a higher DP tendency experienced greater anxiety. Nevertheless, they also exhibited considerate and respectful behavioral intentions toward strangers. However, the results of analyzing relationships between the four types of cognitive strategies and behavioral intentions did not show that individuals with high J-DPQ and the historical item scores, i.e., DPs, had the highest intention to act with consideration for others. Instead, individuals with low scores on the J-DPQ and the historical item, i.e., UOs, displayed the lowest behavioral intentions.

Shimizu et al. (2016) demonstrated a positive association between the DP tendency and considerate and respectful behavioral intentions. DPs might be beneficial in the interpersonal context because DP behaviors lead to positive evaluations from others, and these behavioral intentions are preparatory behaviors for specific situations. However, our results on the four types of cognitive strategies showed the problems related to UO in interpersonal contexts rather than the benefits of DP, because UOs appear to have high future expectations despite their recognition of low performance in the past (Norem, 2001). In other words, they could be regarded as people with an unfounded level of confidence that makes them unlikely to prepare for critical situations adequately. The low levels of behavioral intention in UOs found in this study suggest that they prepare for neither interpersonal nor academic situations. These findings contribute to further our understanding of cognitive strategies, including UO.

We believe that the results of this study provide additional and instructive findings relevant to the generalizability of the results in Shimizu et al. (2016). However, our sample was exclusively composed of individuals in their 20s or 30s; and we did not test the responses to our hypothetical scenarios of people in their 40s or over. Furthermore, we neglected to address the satisfying effects associated with online surveys (e.g., Miura & Kobayashi, 2015). It is suggested that future research should take a more comprehensive approach to overcome these limitations, perhaps by using a questionnaire survey or an experimental procedure for conducting conversations with strangers in a borderer sample people.

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**References**


