学位論文要約

Evidence for the Shift-and-Persist Theory in Japan

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CHAPTER I: INTEGRATED INTRODUCTION

1.1 Socioeconomic Status: A Crucial Contributor to Poor Health

The world has recently entered its most economically successful period, yet it also faces the challenge of widening disparities in socioeconomic status (SES). SES is a comprehensive evaluation of an individual's economic and social standing relative to others, based on income, education, and employment (Dutton & Levine, 1989). In addition, SES is often divided into three levels (high, middle, and low) to describe the three relative positions a family or individuals may occupy.

Low SES is associated with inferior academic achievement (Sirin, 2005), poor interpersonal interactions (Li et al., 2020), and greater levels of maladaptive behavior, such as delinquency and criminality. In addition, low SES is closely linked with physical and psychological health problems, such as metabolic syndrome; greater mortality (Hirdes & Forbes, 1992); increased sadness and anxiety (Gilman et al., 2002); and worse self-esteem (Twenge & Campbell, 2002). Thus, poor SES is an important determinant of a variety of personal and social difficulties, as well as a pervasive issue that has been well acknowledged throughout nations or cultures.

However, Chen and Miller (2012) note that even a small number of people who continue to be exposed to adversities and difficulties caused by low SES can remain protected and maintain good health. They also argue that not all individuals who experience difficulties and adversities due to low SES have poor physical and psychological health. Then, why are some individuals able to protect and maintain their health, even with low SES?

1.2 The Shift-and-Persist Strategy

One theory that provides an answer to this question is the "Shift-and-Persist" strategy (*Shifting* plus *Persisting*; hereafter, S-P). This strategy, based on extensive research on coping and resilience, was proposed and developed specifically to consider the unique combination of coping resources necessary to counter the negative health ramifications of poverty and economic stress (Chen, 2012). Accordingly, S-P is not a newly proposed original concept, but a combination and new labeling of several existing concepts about coping and resilience.

This strategy combines two strategies, *Shifting* and *Persisting*. First, Shifting involves adapting to the external environment by reframing the negative aspects of adversity that one may encounter daily in a stressful life and practicing emotion regulation. The components of Shifting include accepting stressors, making more positive appraisals, and effectively regulating emotions during stressful situations. The second strategy is Persisting, which involves adapting oneself to adversity by finding meaning in one's life and circumstances, having the strength to endure adversity, and maintaining an optimistic outlook on the future. The components of Persisting include enduring adversity through strength, finding meaning, and maintaining optimism regarding one's future.

1.3 Strength of the Shift-and-Persist Strategy

The Shifting component—a form of emotion regulation—can be learned through interventions such as recognizing, understanding, and naming emotions (Brackett et al., 2019), and the Persisting, i.e., optimism, can be cultivated through exercises such as imagining or visualizing the future self (Malouff & Schutte, 2017). This indicates that S-P has a significant number of components that can be learned and

developed by intervention and psychoeducation.

In addition, when evaluating the cost effectiveness of policies pertaining to SES and health, it is crucial to collect evidence that might contribute to effective means of addressing the issue, such as S-P interventions. Although there are many policy options for improving the health of low SES individuals (e.g., financial help and public health programs), these options have varying levels of cost effectiveness. If the effects of these improvements are nearly equal, policymakers will choose the least costly option based on the scientific evidence. Accordingly, S-P is an effective approach for addressing health problems related to low SES, which, if validated, can bring advantages to a broad range of policymakers in a variety of clinical and educational settings.

1.4 Overview of Previous Studies on Shift-and-Persist Strategy

Although the history of S-P research is brief, numerous empirical findings on physical and physiological health have accrued since its beginning. Previous research has shown, for instance, that low SES individuals with higher S-P (i.e., higher Shifting and Persisting scores) have lower levels of allostatic load (the physical and mental exhaustion caused by excessive and chronic stress; Chen et al., 2012) and various beneficial physical and physiological effects, such as lower BMI (body mass index; Kallem et al., 2013) and lower asthmatic response (Lam et al., 2018). In particular, the analysis examining the need for the S-P combination revealed that the interaction between SES and Shifting or Persisting one alone was not significantly associated with metabolic or inflammatory indices; only the interaction between S-P and SES was significantly associated with metabolic or inflammatory indices (Chen et al., 2013). This empirical evidence has been suggested that the S-P combination is crucial for

predicting the physical and physiological health of individuals with a low SES.

1.5 Problems Statements of Previous Studies on the Shift-and-Persist Strategy

Despite the acknowledged effectiveness of S-P as an approach to physical and physiological health, S-P theory still contains two major unsolved issues. Chen and Miller's (2012) theoretical work suggests that the beneficial long-term stress-dampening effects of the S-P are evident for both physical and psychological health outcomes. However, their (and others') work has primarily focused on physical health outcomes in early to mid-adolescence in North America using WEIRD samples (Western, educated, industrialized, rich, and democratic; Henrich et al., 2010), with a limited number of non-WEIRD samples.

For instance, S-P combinations have been shown to mitigate depressive symptoms in Latino youth experiencing economic adversity (Christophe et al., 2019), whereas some studies have found no effect of the S-P combination on depression and depressive symptoms in African American, Latino (Lewis, 2016), and Mexican American youth experiencing economic adversity and deprivation (Stein et al., 2022). In addition, studies of Eastern cultures have demonstrated that "Persisting" can diminish depressive tendencies in Japanese college students and adults, regardless of their level of SES and Shifting (Nakashima & Lee, 2016; Lee et al., 2020). Therefore, whether S-P can be applied to the psychological health of the Japanese sample, one of the non-WEIRD groups, is unclear. Accordingly, the first problem is that the strength of S-P in applying into intervention research, which is one of its strengths, is not utilized, making it impossible to move on to the next study.

The second problem with the S-P theory is the scarcity of evidence of the significance of role models in shaping and developing the S-P of children. Chen et al.

(2012) discuss the presence of positive role models (parents, neighbors, teachers, etc.) that provide stable attachment relationships from the S-P advocacy phase, as well as the possibility of S-P learning and development through role models. In S-P theory, role models may promote S-P development by fostering trust in others and positive beliefs, teaching children how to reappraise stressful situations, helping youth be future-oriented, and promoting optimism and meaning in life (Chen et al., 2013). Specifically, role models can assist in promoting S-P in children by demonstrating how to utilize S-P and teaching them how to use these strategies in stressful situations (Chen & Miller, 2012).

Although Chen and Miller (2012) argue role models can aid in S-P, no studies have reported correlations between role models and children's S-P scores. Additionally, there are no findings that children's scores change in response to changes in role model S-P scores. S-P theory also defines a role model as a person to whom one is typically devoted or an individual who inspires children (e.g., a parent, extended family member, or teacher; Chen & Miller, 2012). However, since no research has examined the types of role models included in the untested assumptions of S-P theory, I can only hypothesize as to whether the types of role models postulated by Chen and colleagues (2012; 2013) are being chosen by children. Thus, to utilize the intervention potential of S-P, it is necessary to determine from whom S-P can be learned.

1.6 Next Steps for Shift-and-Persist Strategy: Purpose of the Present Study

The goal of this work is to provide empirical findings that promote the applicability of S-P theory in Japan and a reevaluation of S-P theory by concentrating on two problems with the theory outlined in Section 1.5. Concerning the first problem, by integrating data from six surveys of Japanese samples, an internal meta-analysis

examined the influence of S-P on depressive tendencies, one of the psychological health factors of individuals with low SES (Study 1). Concerning the second problem, I investigated the similarity of S-P tendencies between Japanese parents and children, as well as the interpersonal processes of S-P, to assess the influence of parents (one type of role model) on children's S-P (Study 2). Study 3 used the data from Study 2 to conduct an additional investigation on role models. Specifically, I conducted an exploratory study on the influence of various types of role models and relationships with them on the S-P of children.

CHAPTER II: ASSCOCIATION WITH SES, SHIFT-AND-PERSIST STRATEGY AND PSYCHOLOGICAL HEALTH IN JAPAN
: An Internal Meta-Analysis (Study 1)

2.1 Purpose of Study 1

The primary limitation of the protective benefits of S-P on psychological health, particularly depressive tendencies, was the observed occurrence of contradictory results in non-WEIRD populations. To obtain informative and strong evidence to overcome the above limitation (i.e., the inconsistent findings), we used an internal meta-analysis to integrate the effect sizes (β) of our previous surveys (Surveys 1 through 6, described Table 1) and tested whether S-P can buffer depressive tendencies in low SES individuals. In addition, the internal meta-analysis should be performed under the following conditions: (1) only include studies that have been properly pre-registered; (2) specify the study methods and analysis plan when pre-registered; and (3) determine whether a study should be included in the internal meta-analysis prior to conducting the internal meta-analysis (Vosgerau et al., 2019).

Thus, I conducted an internal meta-analysis on the association between S-P and depressive tendencies in individuals with low SES. Then, after pre-registering all available data, including the relevant data, in a manner that fulfilled the requirements of (2) and (3), which could be addressed at the time the internal meta-analysis was planned. The purpose of Study 1 is to examine if the S-P theory can be applied to Japan; although the S-P theory has proposed an interaction between the three-way interaction between Shifting, Persisting, and SES on health (e.g., Chen & Miller, 2012), no results consistent with this hypothesis have been obtained in psychological health, as mentioned in Section 1.5. Moreover, a main effect of Persisting has consistently been found in previous studies on psychological health among Japanese (Nakashima & Lee, 2016; Lee et al., 2020). Therefore, the hypothesis of Study 1 is to confirm if the main effect of Persisting on depressive tendencies is replicated in Japan.

2.2 Method

Participants and Procedures. I used the internal meta-analysis to integrate effect sizes using the Japanese sample (N = 7,518; males = 3,478, females = 3,548, and 492 unknowns; Table 1) from eight datasets consisting of our past six surveys. All the materials, data, and analysis codes are available at https://osf.io/wqjvn/?view_only=fd2069e31b554b43bde6e19a841354b7.

Table 1

Summary of the Datasets Used for Study 1

Dataset	Survey (Year)	Methodology	Participants	*N*	Japanese version of S-P (Nakashima & Lee, 2016)	Subjective SES (Yanagisawa, Masui, Furutani, Nomura, Yoshida, & Ura, 2013)	Depressive Tendency (Aoki et al., 1974)
1	1 (2016)	Questionnaire survey	Female college students	65 (*Mage* = 18.96 years, *SD* = 1.78)	14 items, 4-points (α =.73 [shifting]; α =.82 [persistng])	3 items, 7-points (α =.87)	5 items, 3-points (α =.80)
2	2 (2016)	Questionnaire survey	Female college students	98 (*Mage*=18.48 years, *SD*=1.96)	14 items, 4-points (α =.83 [shifting]; α =.74 [persistng])	3 items, 7-points (α =.85)	10 items, 3-points (α =.89)
3	3 (2017)	Questionnaire survey	College students	183*	14 items, 6-points (α =.83 [shifting]; α =.74 [persistng])	3 items, 7-points (α =.83)	10 items, 4-points (α =.89)
4	4 (2017)	Online questionnaire survey	20s to 50s working adults	662 (333 men, *Mage*=38.48 years, *SD*=9.77)	14 items, 4-points (α =.85 [shifting]; α =.82 [persistng])	3 items, 7-points (α =.86)	10 items, 4-points (α =.93)
5	5 (2019)	Online questionnaire survey	30s to 50s adults	309 (Father = 128, *Mage* = 43.71 years, *SD* = 5.07)	14 items, 4-points (α =.82 [shifting];α =.76 [persistng])	3 items, 6-points (α =.87)	10 items, 4-points (α =.94)
6	5 (2019)	Online questionnaire survey	Middle school students	309*	14 items, 4-points (α =.85 [shifting];α =.81 [persistng])	3 items, 6-points (α =.84)	10 items, 4-points (α =.92)
7	6 (2021)	Online questionnaire survey	30s to 60 adults	2946 (1547 men, *Mage* = 46.48 years, *SD* = 5.61)	14 items, 4-points (α =.86 [shifting]; α =.83 [persistng])	3 items, 7-points (α =.91)	10 items, 3-points (α =.92)
8	6 (2021)	Online questionnaire survey	Middle school students	2946 (1470 boy, *Mage* = 13.32, *SD* = 0.94)	14 items, 4-points (α =.85 [shifting]; α =.83 [persistng])	3 items, 7-points (α =.93)	10 items, 3-points (α =.92)

Note. * We did not measure the age or gender of the survey participants. Survey 5 is data from Study 2-1 and Survey 6 is data from Study 2-2.

Scales. The Early Childhood Subjective SES measure was used to evaluate SES (Nakashima & Yanagisawa, 2015). Three questions were asked of the participants: "My family usually had enough money for things while I was growing up," "I felt relatively wealthy compared to the other kids in my school," and "I grew up in a relatively wealthy neighborhood."

The S-P strategy was evaluated using the Japanese version of the S-P measure (Nakashima & Lee, 2016). This questionnaire consists of two factors: Shifting (e.g., "I think about what I can learn from the situation") and Persisting (e.g., "I feel my life has a sense of purpose"). Participants were asked to respond to four Shifting and four Persisting items, as well as six distractor items.

The Todai Health Index (Aoki et al., 1974) was utilized to evaluate depressive tendencies. Participants were asked to respond to ten items such as "I feel down lately" and "Sometimes I feel alone." In Survey 1, however, only five questions were asked to

reduce survey costs and the burden on respondents. In Study 1 and subsequent studies, the reverse items on all measures were computed such that greater scores represent higher subjective childhood SES, Shifting, Persisting, and depressive tendencies.

2.3 Results

I performed a hierarchical multiple regression analysis and obtained standardized partial regression coefficients (β) for the main effects of SES and Shifting, Persisting, and the interactions of Shifting × Persisting, Shifting × SES, Persisting × SES, and Shifting × Persisting × SES, and then conducted the internal meta-analysis. Low SES was associated with the higher depressive tendencies (β = -.094, z = -5.431, $p < .001$), whereas higher Shifting and Persisting were associated with the lower depressive tendencies (β = -.083, z = -7.151; β = -.308, z = -13.354, *ps* < .001). In contrast, the S-P combination had no buffering impact on the negative association between low SES and depressive tendencies in Japanese individuals. The hypothesis is supported, and the magnitude of the effect sizes indicates that Persisting may still be an important protective factor in reducing depressive tendencies among Japanese.

Table 2
Effects of S-P on Depressive Tendencies in Individuals with Low SES

Criterion variable	Explanatory variables	β		95%CI
Depressive tendencies	Main effects			
	SES	-.094	***	[-.128, -.060]
	Shifting	-.083	***	[-.105, -.060]
	Persisting	-.308	***	[-.354, -.263]
	Interaction effects			
	SES×Shifitng	.002		[-.020, .025]
	SES×Persisting	-.008		[-.079, .062]
	Shifting×Persisting	-.000		[-.051, .051]
	SES×Shifitng×Persisting	.041		[-.008, .089]

Note. There are 8 datasets with a total sample size of 7,518 (3,478 males, 3,548 females, and 492 unknown), and the mean sample size per dataset was 940 (*SD* = 1170.97). β = Integrated standardized coefficients, 95%CI = Confidence interval.
*** $p < .001$

CHAPTER III: INTERPERSONAL PROCESSES OF THE SHIFT-AND-PERSIST STRATEGY
: Focusing on Relationship between Parents and Children (Study 2)

3.1 Purpose of Study 2

S-P is formed by teaching and coaching from role models on trust and belief in others, optimistic worldviews, emotion regulation strategies, and future-oriented behavior (Chen & Miller, 2012). Given that role models play a significant role in the development of children's S-P, the tendencies of role models and children's S-P may be similar, and the interpersonal processes via which the S-P of role models may change that of children in the same way over time. Even though Chen et al. (2012) emphasized the significance of role models in their theoretical work, these interpersonal processes between role models and children have not yet been examined. Examining this is particularly essential when considering the targeting and timing of interventions to enhance S-P. Therefore, I conducted Study 2, focusing on parents as representative role models. Specifically, Study 2-1 examined the similarities between parents and children's S-P. In Study 2-2, changes in S-P and the direction of S-P were examined in the context of the parent-child relationship.

3.2 Similarities Between S-P of Parents and Children (Study 2-1)

3.2.1 Method

Participants and Procedures. For Study 1, I recruited Japanese adults in their 30s and 50s and their middle-school aged children (N = 309 pairs; fathers = 128, mothers = 181, M_{age} = 43.71, SD = 5.07) through an online research company in Japan (Macromill Inc., Tokyo) to participate in an online survey. The children's age and sex

were unknown as they were not asked. This survey was distributed only to the respondents who answered "I live with my middle school child and can answer the survey together" in the screening survey, after asking whether they had a middle school-aged child and whether they could answer the survey together as a screening survey. To prevent parents from disguising their responses, I prepared two sets of questions: parent-only and child-only. All participants were informed of the survey outline and consented to participate.

Scales. The scales used were the same as that in Study 1 (see Table 1).

3.2.2 Results

A pairwise correlation analysis was performed to examine the similarities between the Shifting and Persisting at dyad levels, excluding individual-level effects. The interclass correlation (ICC) for Shifting revealed that the similarities between parent and child explained 32% of the total variance (ICC = .322, $p < .001$), implying that Shifting is indeed shared between parent and child. The ICC for Persisting also showed that the parent and child were similar (46% of the total variance; ICC = .455, $p < .001$). This indicates that Japanese parents and children have a moderately positive link between Shifting and Persisting. To identify differences by SES level, the same analysis was repeated, dividing the group into high and low groups by the mean of SES (3.59). The results showed a significant positive association between parents and children's S-P for both low (Shifting: ICC = .239, $p < .01$; Persisting: ICC = .424, *ps* $< .001$) and high SES (Shifting: ICC = .352; Persisting: ICC = .411, *ps* $< .001$).

3.3 Influences of Parental S-P on Children's S-P Trajectories (Study 2-2)

3.3.1 Method

Participants and procedures. I asked Japanese adults in their 30s and 60s (N = 2,946 pairs; fathers = 1,547, mothers = 1,399, M_{age} = 46.48, SD = 5.61, boys = 1,470, girls = 1,476, M_{age} = 13.32, SD = 0.94) and their middle school-aged children to take part through an online research company in Japan (Cross Marketing Inc., Tokyo). Five surveys were conducted every two months [T1 (N = 2,946), T2 (N = 2,297), T3 (N = 1,868), T4 (N = 1,579), and T5 (N = 1,406)] over eight months. The screening survey explicitly stated that it was a longitudinal survey and asked the participants if they wished to participate in all surveys, if they had a middle school-aged child living with them, and if they would participate in the survey together. To obtain high-quality survey responses, I included a questionnaire item in which both parents and children declared that they would answer the survey seriously (Masuda et al., 2019). The main questionnaire was distributed only to those monitors who indicated in the screening survey that (1) they were willing to participate in all surveys; (2) they lived with their middle school-aged child; (3) they could answer the questionnaire together with their middle school-aged child; and (4) they would seriously consider the survey with their parents and child. As in Study 2-1, two survey sections were established to prevent parents from falsifying their answers: parent-only and child-only. All participants were informed of the survey outline and consented to participate.

Scales. The scale used was the same as that in Study 1 (see Table 1).

3.3.2 Results[1]

For a comprehensive test of the purpose in Study 2-2, I utilized the ALTM

[1] Stepdown Bonferroni method was used to adjust significance levels in Study 2-2.

(see Figure 1), which captures major features of both the cross-lagged panel models and latent growth curve models (Bollen & Curran, 2004) with *M*plus (version 8.5; Muthén & Muthén, 2017). The data analysis proceeded in two steps. In the first step, the ALTM assessed a reciprocal (bidirectional) relationship of the parent-child S-P intercept (the initial level) and the slope (the rate of change) between the two processes, called a *co-development process*, was modeled. This step also examined whether the initial level of one variable (e.g., parental Shifting) influenced the rate of change in another variable (e.g., children's Shifting), which was an interaction effect between time and the initial level of parental S-P influencing children's S-P, called a *sequentially contingent process*. The results identified a cumulative influence over time. In the second step, I assessed the cross-lagged effects incorporated in the ALTM to examine the directionality between the parent and child S-P variables in more depth. This analysis was conducted after controlling for parents' age, gender (1 = male, 2 = female), and children's SES at T1.

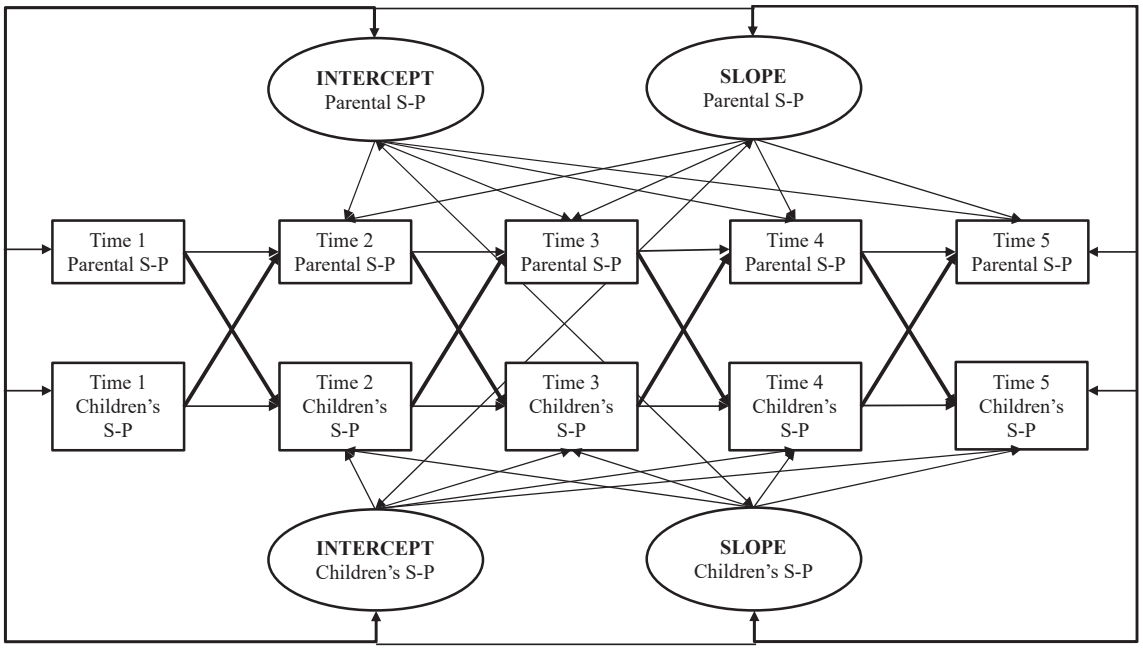

Figure 1. Autoregressive Latent Trajectory Model (ALTM)
Note. Error terms and residual correlations are not shown for the sake of clarity.
At all-waves, stability paths, cross-lagged paths, and residual correlations were all set equal.
Fit: (Shifting: $\chi 2$ (48) = 60.542, CFI = .998, RMSEA = .014, SRMR = .014; Persisting: $\chi 2$ (48) = 64.457, CFI = .997, RMSEA = .016, SRMR = .015)

In *co-development processes*, the covariance parameters of the two growth curves of parental S-P and children's S-P were assessed. The correlation between the average starting points of parental and children's S-P was significant (Shifting: r = .629, *Cov* = 2.151; Persisting: r = .623, *Cov* = 1.602, *ps* < .05), implying that children of parents who engaged more in S-P at T1 were more likely to engage in S-P at T1. The rate of change of parental and children's S-P was also correlated (Shifting: r = .915, *Cov* = .035, p < .05; Persisting: r = .692, *Cov* = .017, *n.s*). The positive association between parents and children for slope (the rate of change) for both Shifting and Persisting is consistent with S-P theory. However, only Shifting was statistically significant. Although Study 2-2 employed the ALTM as the examination model, it is currently positioned as an exploratory study as there could be other models to examine longitudinal data. It is necessary to evaluate the S-P theory after conducting a follow-up study to confirm the model, referring to the values of the path coefficient and covariance obtained in Study 2-2.

In the *sequentially contingent processes*, cumulative (interaction) effects between time and the initial level were assessed. There was no link between the initial level of parental S-P and the rate of change of children's S-P (Shifting: r = .098, *Cov* = .033, *n.s.*; Persisting: r = -.051, *Cov* = -.024, *n.s.*). There was also no link between the initial level of children's S-P and the rate of change of parental S-P (Shifting: r = .072, *Cov* = .025, *n.s.*; Persisting: r = .199, *Cov* = .028, *n.s.*). These results indicate that there is no association between the initial level of S-P and the rate of change; rather, the degree to which the counterpart has changed may be a factor in determining the subsequent change in S-P.

In the ALTM, the autoregressive cross-lagged effects of S-P on parent and child were included. Estimates revealed no significant autoregressive effects for

two-month changes in parental S-P on their own S-P (Shifting (t) → Shifting (t+1): β = -.003, *n.s.*; Persisting (t) → Persisting (t+1): β = .012, *n.s.*) or children's S-P on their own S-P (Shifting (t) → Shifting (t+1): β = .034, *n.s.*; Persisting (t) → Persisting (t+1): β = -.031, *n.s.*). Furthermore, cross-lagged effects were not found between parental S-P and children's S-P (Shifting (t) → Shifting (t+1): β = -.009, *n.s.*; Persisting (t) → Persisting (t+1): β = .009, *n.s.*) and children's S-P and parental S-P (Shifting (t) → Shifting (t+1): β = .013, *n.s.*; Persisting (t) → Persisting (t +1): β = -.014, *n.s.*) across all waves.

CHAPTER IV: AN EXPLORATORY INVESTIGATION ON ROLE MODELS IN THE SHIFT-AND-PERSIST THEORY (Study 3)

4.1 Purpose of Study 3

As indicated in earlier sections, Chen and colleagues hypothesized that low SES children frequently experience challenges within their families, schools, and communities, and that they require multiple types of role models in addition to their parents (Chen & Miller, 2012). In addition, the S-P theory views role models based on the social learning context; it states that thought and behavior patterns (i.e., Shifting and Persisting) are influenced by mimicking the behavior of individuals deemed more valuable than others, as opposed to merely modeling it. Furthermore, they emphasize that belief and attachment relationships with role models are the foundation of S-P development in children (Chen et al., 2013).

Based on this discussion of role models, I did an exploratory study in Study 3 to determine if the amount of children's S-P differs based on the presence or absence, type, and relationship with the role model.

4.2 Method

Participants and Procedures. The 1,134 middle school-aged children who answered all questions about role models in the each of the five waves (Times 1–5) from Study 2-2 (N = 1,406 pairs, 692 boys and 714 girls, Mage = 13.30, SD = 0.92) were included.

Scales. In addition to the scale used in Study 2-2, participants were also asked four additional questions on role models. Participants were required to read a description of the behaviors that an S-P role model would perform and then to think of someone who matched this description for the first question. Next, participants who responded "yes" were asked to select the person who came to mind when they read the description from the alternatives ranging from 1 (father) to 8 (friends, friends of club activity) and 9 (others).

To assess one aspect of the emotional relationship between parents and children, I used the Adolescent Version of the Interpersonal Belief Scale created by Sakai (2005) based on Erikson's (1963) basic trust in the species and Bowlby's (1973) internal working model theory. Children were asked to rate 8 items related to their parents' beliefs on a scale from 1 (not applicable) to 4 (applicable). Examples of items include "Do you think your parents have the most belief in you?" and "Can you believe your parents more than anyone else?".

The Attachment in Early Childhood Scale developed by Igarashi and Hagiwara (2004) was utilized to measure early attachment to parents. Children were asked to recall their attachment relationships in their early childhood and to respond to 14 items on a 5-point scale from 1 (not applicable at all) to 5 (very applicable). Examples of items include "I liked my parents," "I sometimes felt that my parents did

not like me very much," and "I was anxious unless my parents were by my side."

4.3 Results

The responses to the S-P role models are described in Table 3. An analysis of the answer patterns of this group revealed around 74% of all middle school-aged children viewed their parents as S-P role models. Friends and teachers were identified as the next most probable role models. For those who selected "others," physicians, sports, and entertainers were indicated.

Table 3
Trends of Middle School-Aged children's in Choosing Role Models for S-P

Itmes	N	%
1. Father	278	24.51
2. Mother	560	49.38
3. Grandparents, other relatives	35	3.09
4. Older Brother/Sister	17	1.50
5. School Teacher	74	6.53
6. Teachers outside of school (cram schools, prep schools, tutors, club activity supervisors, coaches, etc.)	24	2.12
7. Seniors at school	5	0.44
8. Friends, friends of club activities	137	12.08
9. Other	4	0.35
Total Score	1134	100

Effects of the presence of role models on children's S-P (Analysis Perspective 1). With children's S-P at Time 1 as the control variable and that at Time 5 as the dependent variable, a one-way ANOVA was conducted with the two conditions of the presence or absence of role models. The main effects on children's Shifting (F (1, 1,403) = 87.189, $p < .001$, $\eta^2 p = .059$) and Persisting (F (1, 1,403) = 59.791, $p < .001$, $\eta^2 p = .041$) were observed. The results indicate that children who reported having a role model displayed increased S-P scores in Shifting and Persisting compared to those who reported having no role model.

Effects of different types of role models on children's S-P (Analysis Perspective 2). A one-way ANOVA was performed on the four types of role models (parents, teachers, friends, and all others) with children's S-P at Time 1 as control variables and S-P at Time 5 as the dependent variable. The results indicated children's Shifting (F (3, 1,129) = 1.092, *n.s.*, $\eta^2 p$ = .003) and Persisting (F (3, 1,129) = .623, *n.s.*, $\eta^2 p$ = .002) did not significantly increase owing to the type of role model.

Effects of parent-child relationships on children's S-P (Analysis Perspective 3).[2] To examine the effects of belief in parents and attachment relationships with parents on the change of children's S-P scores, only children who chose their parents as role models were included in the analysis. Next, hierarchical multiple regression analysis was conducted with the S-P scores of the children at Time 5 as the criterion variables; those at Time 1 as the control variables in Step 1, belief in parents and attachment relationships (three subfactors: security and dependence, distrust and rejection, and separation anxiety) as explanatory variables in Step 2, and the interaction between belief in parents and each attachment relationship in Step 3 as explanatory variables. The analysis revealed a significant increase in the explained variance ratio from Steps 1 to 2 (Shifting: ΔR^2 = .025, F (4, 832) = 6.535, $p < .05$; Persisting: ΔR^2 = .016, F (4, 832) = 3.802, $p < .05$). As no significant increase in the variance explanation rate was found from Steps 2 to 3 (Shifting: ΔR^2 = .003, F (3,829) = 1.145, *n.s.*; Persisting: ΔR^2 = .002, F (3,829) = .425, *n.s.*), the model of Step 2 was adopted (see Tables 10–11). The results showed that only the main effect of parental beliefs was concurrently and longitudinally related to higher S-P scores among

[2] Holm method was used to adjust significance levels in Analysis Perspective 3 on Study 3.

children whose parents were role models (Shifting: β = .105; Persisting: β = .101, *ps* < .05). For children who choose the parent as their role model, the higher their basic trust in the parent, the greater their S-P changes over time.

CHAPTER V: INTEGRATED DISCUSSION

5.1 Findings and Implications

In the first attempt to examine the contradictory outcomes of psychological health on S-P, Study 1 revealed the main effects of SES, Shifting and Persisting, with each higher level suggesting a reduction in depressive tendencies. However, it was not possible to observe the three-way interaction between SES, Shifting, and Persisting as S-P theory implies. The result that no three-way interaction was obtained contradicts previous research (e.g., Christophe et al., 2019) and casts doubt on the application of S-P theory directly to Japan.

However, Study 1 is the first internal meta-analysis to focus on the interaction of SES, Shifting and Persisting, and its effects on depressive tendencies. Notably, these data demonstrated that each of Shifting and Persisting decreased depressive tendencies regardless of SES. This is due to the fact that it indicates the need for additional study on Shifting and Persisting interventions to promote the psychological health of individuals with low as well as those with high SES.

A correlation between parental S-P and children's S-P was found in a cross-sectional study (Study 2-1). The ALTM analysis used to trajectories changes in S-P between parents and children from a longitudinal investigation also found a positive association between the rates of change in parental and child S-P, suggesting

that S-P between parent-child may change in a dynamically balanced manner (Study 2-2). The exploratory study (Study 3) on role models derived the following three points: (1) The increase in each S-P score is higher with a role model than without one, (2) there is no difference in how the S-P score increases with various types of role models, and (3) when a parent is chosen as a role model, the stronger the basic trust in the parent, the greater the increase in each S-P score.

These results are one piece of evidence supporting the importance of the preconditions Chen and colleagues had when they first introduced the S-P theory. Thus, the accumulated findings regarding the influence of role models in S-P have substantial implications for future S-P intervention and psycho-education programs.

5.2 Limitations and Future Directions

Overall, the findings of this study can be interpreted as results demonstrating the effectiveness of intervention programs that incorporate both low and high SES. However, given that the effect size of Shifting is significant but small in Study 1 and the non-significant link between Persisting parent-child changes in Study 2-2, it would be premature to proceed directly to psychoeducational intervention research. Before proceeding, the following examinations must be considered:

First, I need to conduct a direct replication of Study 2-2. Even though Study 2-2 utilized ALTM, the setting of paths and covariances contained an exploratory aspect. In contrast to evaluating the interpersonal process between parents and children in S-P based solely on the results of this ALTM analysis, a replication study should be conducted using the paths and covariance estimates acquired in Study 2-2 and reevaluating them prior to intervention research.

The next study to be conducted will be a developmental study based on Study 3. Study 3 demonstrated that S-P scores were higher when role models were present, and that the types of role models (parents, teachers, and friends) did not influence changes in S-P scores. These findings suggest the utility of S-P training not only for parents but also for teachers themselves, or group-based psychoeducation in school settings that include the children themselves and their friends. However, because Study 3 did not consider the relationship with teachers and friends (e.g., basic trust), it must be stated that there is no evidence as to which role models should be used as the target of the intervention. In the future, additional longitudinal data gathering will be required to overcome this issue.

Finally, before setting up a specific intervention program, it is necessary to conduct a systematic review of intervention research on the components of Shifting and Persisting (e.g., cognitive reappraisal and optimism). Indeed, numerous intervention studies have focused on each of the Shifting and Persisting components. However, I do not know which of these programs would be most effective at enhancing S-P. Hence, it will be important to conduct a systematic review aimed at selecting the intervention program. Such a strong procedure would be necessary to prevent unanticipated results from future S-P interventions.

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