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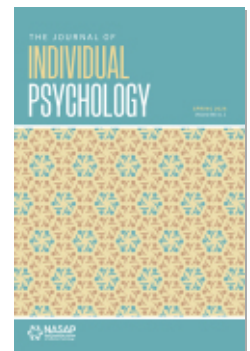
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# Encouragement as a Form of Social Support Promoting Boundary Crossing and the Development of a Courage Scale

Satoshi Kato

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**ABSTRACT:** A courage scale was developed to address issues regarding the definition of Adlerian courage. It considered the relationships among encouragement, courage, and boundary crossing in Japanese university students using structural equation modeling (SEM). According to exploratory factor analysis, the courage scale comprised two factors: striving for superiority over the self and social interest, consistent with Adler's model of courage. Both factors exhibited sufficient reliability and validity. The SEM results indicated that encouragement from an intimate friend positively influenced social interest, which in turn positively influenced boundary crossing while negatively influencing boundary crossing in the absence of mediation. A classroom management approach based on the results and aimed at enhancing social interest is discussed from an Adlerian perspective.

**KEYWORDS:** encouragement, courage, boundary crossing, striving for superiority, social interest, social support

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IN TODAY'S GLOBALIZED WORLD, COMMUNICATION WITH OTHERS OUTSIDE of one's country of residence is considered as important as communication within the country. Although the 2019 COVID-19 pandemic restricted the ability of people to cross borders, some have argued that the pandemic promoted globalization by requiring the development of remote working technologies (e.g., Contractor, 2021). It is crucial for companies to attract global talent to survive, regardless of whether a pandemic is ongoing. Intentional negotiation or the experience of different contexts (e.g., professions, disciplines, cultures), followed by reflecting on one's actions and gaining new insights, is referred to as "boundary crossing" (Akkerman & Bakker, 2011; Engeström, 2001). According to Thant Sin (2022) and Tsui and Law (2007), globalization has blurred territorial boundaries and borders. There is a need to address issues associated with boundary crossing during efforts to adapt to today's globalized world.

Studies investigating boundary crossing have focused on the cognitive conflict and conceptual change that result from interactions with others and different experiences (Rückriem, 2009). Conceptual change involves self-reflection and understanding of others (Enright et al., 1980;

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Fresco et al., 2007; Schwarz et al., 2011; Young et al., 2002). Cognitive conflict arises from disagreements with others and can facilitate conceptual change during discussions meant to resolve such conflict (Kruger, 1992; Miyake, 1986; Sumida & Mori, 2019). This study regards conceptual change as a consequence and representative of boundary crossing. Empirical studies of boundary crossing have largely been conducted in the fields of organizational and educational studies (e.g., Konkola et al., 2007; Nakanishi & Enatsu, 2020). For example, the study by Konkola et al. (2007) on educational internships revealed how boundary crossing enabled student teachers to make new discoveries during teaching. Similarly, other studies have explored how boundary crossing promotes a multilateral view of the world (e.g., Kagawa, 2012; Pimmer, 2016; White et al., 2005; Williams et al., 2007).

Although empirical studies of boundary crossing have primarily been concerned with cognitive aspects, some have examined emotional aspects, such as anxiety (Bao et al., 2014; Lee et al., 2003; Lindqvist, 2019). For example, Lee et al. (2003) focused on boundary crossing in science education and demonstrated that students tend to experience anxiety when they learn new scientific concepts removed from their contexts. They also suggested that boundary crossing may be facilitated if students can cope well with their anxiety, but it may be inhibited if they are unable to cope. Bao et al. (2014) stated that boundary crossing pertains not only to cognitive conflict but also to emotional traits. Lindqvist (2019) reported that students who had undertaken internships while at school often experienced emotional difficulties and struggled to manage their feelings during interactions with their peers or teachers whose contexts differed from their own. Overall, certain emotional traits are generally regarded as impediments to boundary crossing.

The positive functions of emotion have largely been neglected in studies of boundary crossing. In studies examining emotional aspects, courage was defined as an emotional trait that manifests in response to adversity and promotes boundary crossing (Enright & O'Sullivan, 2012; Lipnack & Stamps, 1993; Tanggaard, 2007; Yamazumi, 2007). For example, Lipnack and Stamps (1993) stated that fear obstructs boundary crossing and that courage is required to shift this block. Moreover, Yamazumi (2007) stated that courage is important for boundary crossing and innovation in the school environment. Tanggaard (2007) interviewed students attending vocational school and reported that they developed courage through communications with their peers in school, which facilitated boundary crossing during internships. Similarly, Enright and O'Sullivan (2012) interviewed teachers and found that they required

courage to introduce changes in education to encourage students to exhibit greater autonomy and responsibility in class.

Although literature reviews and field studies have shown that courage is a trait that fosters boundary crossing, statistical analysis of the effect of courage on boundary crossing has not been conducted. Hence, the primary goal of this study is to verify the impact of courage on boundary crossing through statistical analyses. This study draws on the work of Alfred Adler (1930a, 1930). Adlerian researchers have investigated courage systematically and practically in light of Adler's theory, in the absence of a systematic definition. By applying Adler's theory, this study aims to identify the positive role of emotion in boundary crossing.

### **INTERPRETATION OF ADLER'S WORK ON COURAGE**

In his original work, Adler (1930a, 1930b) noted that courage plays an important role in confronting and benefiting from the challenges encountered in life. However, his work on courage was based only on case studies, and he provided no clear definition of courage, which in fact has multiple potential interpretations depending on the researcher's perspective. For example, Ansbacher and Ansbacher (1956) defined courage as an activity that indicates the ability to act in the social interest, which in turn reflects the individual's attitude toward society. Yang et al. (2010) defined courage as a force that moves the individual forward in life despite difficulties and in the interest of both the self and others. According to Ansbacher and Ansbacher (1956), individuals who have social interest are more likely to be courageous and successful in confronting difficulties.

Yang et al. (2010) indicated that, along with social interest, striving for superiority is associated with courage. According to Adler (1930a), social interest and striving for superiority can be classified as primary motives. Stone and Drescher (2004) stated that children who lack social interest may become arrogant or lazy, and such children need striving for superiority to be courageous in addition to social interest. Taken together, previous studies show that striving for superiority can also be a factor of courage.

Although the concept of courage offered by previous studies is convincing, it does not address the problem of the superiority complex, which refers to an exaggerated sense of one's own worth (Adler, 1930b). Striving for superiority has some ambivalent aspects and can provoke envy or anger while also contributing to self-growth. However, studies have tended to emphasize the negative aspects of striving for superiority (Mansager & Griffith, 2019); for example, its ambivalent nature was not fully addressed by Yang et al. (2010).

Two aspects of striving for superiority can be distinguished on the basis of Adler's (1930b) work: favorable comparison with the self and unfavorable comparison with others. Kato (2020) noted that, in the former type of striving for superiority, others are viewed as beneficial to one's own growth; in the latter type, others may be viewed as harmful: only the former type of striving for superiority can be a factor of courage.

The idealized form of striving for superiority described by Yang et al. (2010) is consistent with the concept of striving for superiority over the self, which is characterized by a desire to transcend difficulties (Kato, 2020). Given Adler's (1930a) statement that courage is beneficial when facing difficulties, striving for superiority over the self can indeed be a factor of courage.

In a large-scale study of intrinsic motivation, Suzuki and Sakurai (2011) reported a significant relationship between the desire to achieve personal growth and the desire to contribute to society. Furthermore, Mizokawa and Koyasu (2017) observed a significant relationship between self-orientation and empathetic ability. These findings support the notion that striving for superiority over the self is associated with social interest.

No studies have simultaneously evaluated the roles of courage in striving for superiority over the self and social interest. This study developed a courage scale to provide new insights into and stimulate research on boundary crossing.

### **SOCIAL SUPPORT AS ENCOURAGEMENT**

According to Adler (1952), the development of courage requires support from others, particularly one's parents or teachers. From an Adlerian perspective, such support is called encouragement (Adler, 1952; Wong, 2015). Adler (1930b) stated that encouragement offers the individual a way to affirm themselves and make strides along a fruitful path.

In psychological research, encouragement is represented by social support—that is, assistance from others with whom one has intimate relationships, such as family, friends, and teachers (Gfroerer et al., 2013). Social support is mainly classified as instrumental or emotional, both of which are regarded as crucial (Fukuoka & Hashimoto, 1997). Studies have explored the relationship between social support and conceptual change. For example, Zhou (2010) stated that, in experimental science classes, social support from teachers promoted conceptual change in students when the results of the experiments were inconsistent with their expectations. Other studies also demonstrated that social support from intimate others promotes conceptual change (Dega et al., 2013; Loyens et al., 2015).

However, there remains a small risk that social support may inhibit conceptual change. Kikushima (2003) reported cases in which the provision of social support without consideration of the emotional state of the recipient had a negative effect. From the perspective of Adler's theory, social support may inhibit conceptual change when controlling for the effect of courage.

From Kikushima's perspective, it can also be expected that social support that considers the recipient's emotions may have a positive effect: social support influences courage, which in turn influences the likelihood of conceptual change.

Hence, the third goal of this study is to consider the relationship between social support and conceptual change while controlling for courage or including it as a mediating variable. From Kikushima's perspective, it can be assumed that social support has a direct, negative effect on conceptual change, but it has a positive effect on conceptual change in the presence of courage.

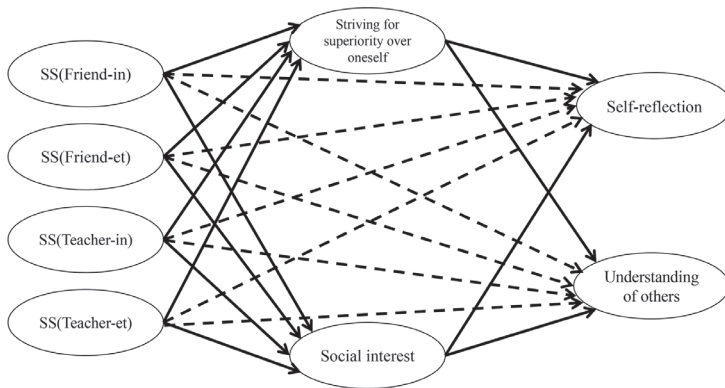
University students in Japan were selected as the research subjects; their friends and university teachers were the people providing them with encouragement. University students in Japan are expected to acquire skills for boundary crossing with people in different contexts (Ministry of Education, Culture, Sports, Science and Technology, 2010). Therefore, the students were considered appropriate subjects for this study.

Although Adler focused on parents and teachers as providers of encouragement, Murakami and Sakurai (2014) revealed that intimate relationships change as people grow older. Buote et al. (2007) found that many university students considered their friends at university to be the best source of support in times of need. Therefore, it seemed appropriate to include intimate friends and university teachers as the providers of encouragement for the subjects in this study.

## HYPOTHESES

Based on literature reviews and the study goals, the hypotheses of this study are as follows (Figure 1):

- H<sub>1</sub>: Both striving for superiority over the self and social interest (on the basis of Kato's 2020 courage model) have adequate reliability and validity.
- H<sub>2</sub>: Any type of social support has negative effects on conceptual change, such as self-reflection and understanding of others (direct effect).



**Figure 1.** Hypothesis testing using structural equation modeling. Figure by author.

H<sub>3</sub>: Any type of social support has positive effects on courage, such as striving for superiority over the self and social interest, and courage has a positive association with conceptual change (indirect effect).

## METHOD

### Participants

The sample in this study comprised 296 undergraduate and graduate students at Japanese universities. The respondents ranged in age from 18 to 30 years (mean age = 19.7 ±1.57 years). There were 220 females, 74 males, and 2 participants who did not report their gender. The survey was administered from January through April 2021. The study was granted approval by the ethical board of the author’s institution before the survey was conducted.

### Measurements

#### *Courage Scale*

The preliminary version of the courage scale was developed to quantify striving for superiority over the self and social interest (Table 1). A total of 24 items were developed, all of which were rated using a 5-point Likert scale (1 = *strongly disagree*, and 5 = *strongly agree*). In developing the items, Kato’s (2020) courage model was referred to, as were previous scales of social interest (e.g., Kosaka, 2011) and works by Adler (1930a, 1930b, 1952, 1954). Of the 24 items, 12 pertain to striving for superiority over the self and social interest. The items were reviewed by a graduate student majoring in psychology and modified as necessary.

**Table 1.** Preliminary Version of the Courage Scale

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<b>Social Interest</b>
1 I treat everyone with compassion.
2 I don't doubt others without consideration.
3 I tend to ignore things that are not of interest to me. (R)
4 I don't have much interest in someone who I meet for the first time. (R)
5 I'm not good at participating in teamwork. (R)
6 I act based on whether there is likely to be a profit or loss for myself. (R)
7 I'm a person who is willing to take actions to help others.
8 I'm willing to lend a hand to anyone in need.
9 I'm able to act independently for the benefit of others.
10 It's useless to be intimate with someone who I meet for the first time. (R)
11 I'm willing to talk to anyone who I meet for the first time.
12 When I talk to someone who I meet for the first time, I wait until they talk to me. (R)

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<b>Striving for Superiority Over Oneself</b>
13 I don't care if someone is better at something I'm passionate about.
14 I think I'm a valuable person.
15 I tend to compare myself to others in everything. (R)
16 I tend to show off my knowledge and advantages to others. (R)
17 I am happy with my current situation. (R)
18 I have a dream or goal that I want to achieve.
19 I have an ideal self-image that I want to fulfill.
20 I don't want to change my life. (R)
21 I think I am a person who can work hard to ensure my own growth.
22 I'm a person who can work hard to achieve dreams and goals.
23 I'm a person who strives to be the best at everything I do.
24 When I am faced with a challenge, I tend to procrastinate in solving the problem. (R)

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*Note.* (R) represents reverse scored items.



### ***Resilience Scale***

The resilience scale developed by Hirano (2010), which also uses a 5-point Likert scale (1 = *strongly disagree*, and 5 = *strongly agree*), was employed to confirm the validity of the courage scale, which has seven sub-scales measuring optimism, control, sociability, vitality, attempting to solve a problem, self-understanding, and understanding others. Previous studies of courage have highlighted its similarity to resilience (Lee et al., 2012; Pury & Saylor, 2017; Rachman, 1984). Adlerian studies have also noted similarities between Adlerian courage and resilience (Brendtro & Larson, 2004). It was thus expected that the factors of the courage scale would correlate positively with those of the resilience scale.

### ***Social Support Scale***

A social support scale developed by Hosoda and Tajima (2009), which used the same 5-point Likert scale described earlier, was employed to measure the relationship with courage and conceptual change. Two sub-scales measure instrumental and emotional support. This scale requires participants to respond to each item twice, first with recollections of an intimate friend and then of a university teacher. This scale was originally designed for junior high school students. One item was deleted from the original scale to ensure compatibility with the target group (i.e., university students) in this study.

### ***Indexes for Conceptual Change and a Writing Task***

Indexes for conceptual change and an essay-writing task were developed to quantify self-reflection and understanding of others. Boundary crossing was discussed with an expert, and it was decided that the task should be based on lending and borrowing money. Most people in Japan have some level of interest in this topic, although the way it is conceptualized greatly varies according to cultural factors (Takahashi & Yamamoto, 2020). Lending and borrowing money were also focused on in a previous study of boundary crossing in the context of intercultural communication (Tajima & Jiang, 2018). The instructions for the task were as follows (Figure 2): first, participants were asked to decide whether they would lend 200,000 JPY (approximately \$1,500) to an intimate friend at university who had misunderstood the payment deadline for studying abroad owing to a miscommunication with a school official and urgently needed the money to make payment on time. They were also asked to explain their choice. Regardless of whether the participants decided to lend the money, an opposing view from an international student was then presented and the participant was asked to write an essay in response in English.

**Table 2.** Definitions and Examples of Self-Reflection

Score	Definition	Example quote for those who responded to lend money	Example quote for those who responded not to lend money
5	An argument that is transformative and persuasive based on the opinion of others.	<p>"I can partly agree with your opinion. Indeed, 200,000 yen is expensive, and not an easy deal to put. If I were short of money, I wouldn't lend that much money. Things can change depending on one's situation, actually. So in my opinion, as to this question there can be various opinions based on one's own environment."</p>	<p>"200,000 yen is a lot of money for me, and lending this amount of money is very risky for me. I will explain that and ask her to find someone else. Even though I will not lend money, I can help my friend find someone else that can lend money. After that, if she still has not found anyone, I can lend the money with a contract."</p>
4	An argument that is transformative based on the opinion of others.	<p>"I can understand your opinion. I also try to help the friend with another way first. However, if there are no ways to solve the problem except lending my money, I will lend my money to her. I have confidence that she definitely pay back. I believe her."</p>	<p>"I can understand your point. However, for me, 200,000 yen is a lot of money. I would love to help my friend whenever I can, but I'm not yet capable enough to lend that amount of money at once. I would try my best to help my friend in some other way."</p>
3	An argument that is persuasive but not based on the opinion of any other person.	<p>"So what is another way to help her? The college doesn't change the deadline for only one student. It's OK even if she cannot repay my money. I think what she has given me is worth more than 200,000 yen. Of course, I believe she will repay all money."</p>	<p>"I understand your point, but I still disagree with the idea. We shouldn't lend money to others no matter how close [we are] each other. If your friend cannot return money to you, the friendship of you and your friend is easily broken, right? Therefore, we cannot call it a 'friendship.'"</p>

2	An argument that is somewhat unconvincing and not based on the opinion of another person.	"I'm not too poor to live even if I lend money. And I'm sure that he pays 200,000 yen after his studying abroad. I think if I don't lend money, I can't be called his 'friend.' I mean, friends should help their friends in need."	"Do you really understand friendship? Simply kind mind hurt you. If your money has gone, can you sue your friend? You have to have more responsibility."
1	An argument that is unconvincing and not based on the opinion of another person.	"My friend needs money right now. So is there any other way to help other than lending my money to a friend?"	"I don't have money. I want to help the friend. If I give money to the friend, I can't live."

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**Table 3.** Definitions and Examples of Understanding of Others

Score	Definition	Example quote for those who responded to lend money	Example quote for those who responded not to lend money
5	An argument that shows a strong sense of respect for others as well as understanding and empathy for others.	<p>"I can understand your opinion, but still I would like to lend money in this case. I think the best way to support the friend is lend 200,000 yen. If I need a lot of money soon or I cannot afford to lend 200,000 yen, I won't lend money even if the friend is my best friend. However, by good luck, 200,000 yen is not impossible for me now. In addition, I hope my friend's dream comes true from the bottom of my heart. That's why I want to give financial support to my friend."</p>	<p>"I'm sorry but I don't agree with you. Of course it is important to help friends, especially when they are struggling with something. But I don't think it is right to do something for others at the sacrifice of myself. They don't blame me because they will understand me as well as I understand them if they are friends of mine."</p>
4	An argument that shows a sense of respect for others as well as understanding and empathy for others.	<p>"I can understand your idea. Of course I know 200,000 yen is too huge to lend to one of my friends. But I don't hesitate to lend it to the friend because I trust her. Plus, I want to help her, and I want her to achieve her goal."</p>	<p>"Your opinion is also true, but I think it is hard for me to lend such much money to my friend who have seen each other for less than a year. It is also important for the friend to experience such incidents to survive in this world. I can understand clearly what you mean, but to tell the friend that it was your fault is also a kind of</p>

friendship. For this reason, I will not lend the money.”

“I understand your opinion, but I don’t think it is OK to make money concerned with a friendship. If he or she is not able to pay back, we would be in a big trouble and it will be difficult being friends. What is more, it is own fault that he or she didn’t know a necessary to pay in advance.”

“I think 200,000 is very high. And I don’t have such money. I think she could get money from her parents.”

“The friendship you said is very cheap. I think that such like a friendship is not necessary. I and the friend should respect own idea each other. This is real friendship.”

“I agree with your opinion. But I think it is the best way that can help my friend to lend money in emergency time. I will help my friend without lending money if I can come up with the other way.”

“In this situation, there is nothing to do for my friend except for that. I want my friend to do what she/he wants. If she/he is really good friend for me, I can trust her/him.”

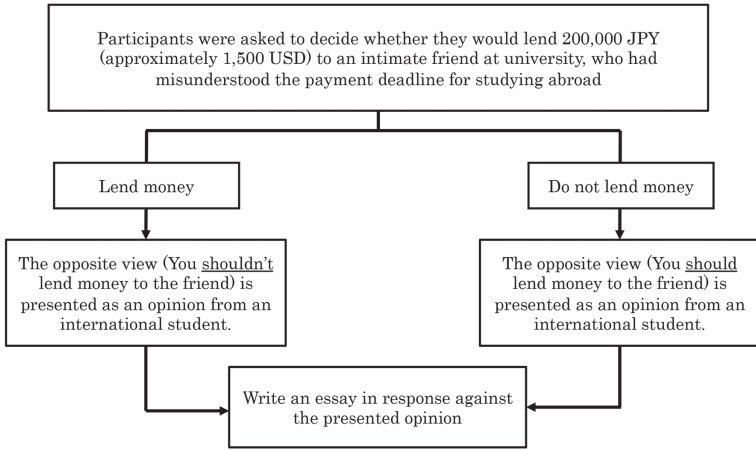
“Your idea of not lending the money is just your opinion. You don’t know much about my friend, so to decide help her or not isn’t your business. Whatever you say, I believe her, so I’ll lend her money. Or tell me the other way if you say so.”

3 An argument that shows a sense of understanding and empathy for others.

2 An argument that does not show understanding and empathy for others.

1 An argument that does not show understanding and empathy for others. It seems rather provocative.

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**Figure 2.** Flowchart of the writing task used to evaluate conceptual change. Figure by author.

Akkerman and Bakker (2011) conducted a systematic literature review of boundary crossing and found that most studies identified the transformation of practices or values as the most successful strategy for resolving conflict. Tajima (2013) demonstrated that boundary crossing was facilitated by interest in different viewpoints and the active exchange of ideas with others. With reference to these findings, the students' essays were scored on a 5-point scale in terms of self-reflection and understanding of others, with higher scores denoting better performance. Definitions and examples of self-reflection and understanding of others are provided in Tables 2 and 3.

### **Data Analysis**

The data analysis was divided into two phases. In the first phase, the reliability and validity of the courage scale were assessed, with reference to the resilience scale of Hirano (2010), by exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and correlation analysis. CFA can be used to evaluate the construct validity of scales (Atkinson et al., 2011). Previous studies have used CFA to evaluate the construct validity of existing scales for structural equation modeling (e.g., Uchida, 2021).

In the second phase, structural equation modeling (SEM) was performed after CFA of the social support scale and evaluation of the participants' writing task and Cohen's (1960) weighted kappa ( $\kappa$ ), which serves

as a measure of interrater reliability. Following an initial assessment, approximately 30% of the writing-task answers were analyzed by an independent rater; more than 20% of the answers for a given task must be assessed by an independent rater to calculate  $\kappa$  and evaluate interrater reliability (e.g., Azmitia & Montgomery, 1993; Miell & MacDonald, 2000). The value of  $\kappa$  is in the range of 0–1, where higher values indicate better agreement. According to Landis and Koch (1977),  $\kappa > 0.60$  indicates high interrater reliability.

## RESULTS

### First Analysis Phase

#### *EFA of the Courage Scale*

Principal axis factoring was conducted through promax rotation of the 24 items of the preliminary version of the courage scale to explore the factor structure. The scree plot indicated that two- to four-factor solutions were appropriate for the data. However, on the basis of Kato's (2020) courage model, a two-factor solution was selected. Items with loadings less than .40 ( $n = 8$ ) were removed, and principal axis factoring was reperformed on the remaining items to confirm that they all had factor loadings greater than or equal to .40. The factor loading matrix is presented in Table 4.

Seven items showed high loadings on the first factor, and all items except one ("I'm a person who is willing to take actions to help others") were consistent with a preliminary striving-for-superiority-over-the-self scale. Thus, factor 1 was labeled "striving for superiority over the self." Nine items showed high loadings on factor 2 and were consistent with the items of a preliminary social interest scale. Therefore, factor 2 was labeled "social interest." The Cronbach's alphas were .78 for striving for superiority over the self and .82 for social interest.

#### *CFA of the Resilience Scale and Correlation Analysis*

First, CFA of the resilience scale was conducted to investigate the validity of the courage scale. The factor loadings and Cronbach's alphas for each subscale are shown in Table 5. The model had an acceptable fit to the data ( $\chi^2 = 379.277$ ;  $df = 168$ ,  $p < .001$ ; goodness-of-fit index, GFI = .889; adjusted goodness-of-fit index, AGFI = .847; comparative fit index, CFI = .893; root-mean-square error of approximation, RMSEA = .066), and the loadings were greater than .40 for all items. Although several factors appeared insufficiently reliable, all the Cronbach's alphas in this study nevertheless approximated those obtained for the original scale

**Table 4.** Factor Loading for the Courage Scale

Items	F1	F2
<b>Factor 1: Striving for Superiority Over Self (<math>\alpha = .78</math>)</b>		
18. I have a dream or goal that I want to achieve.	<b>.83</b>	-.21
22. I am a person who makes efforts to achieve dreams and goals.	<b>.78</b>	-.08
21. I think I am a person who can work hard for my own growth.	<b>.68</b>	.04
19. I have an ideal image of myself that I want to become.	<b>.64</b>	-.14
7. I am someone who is willing to take action to help others.	<b>.54</b>	.28
14. I think I am a valuable person.	<b>.51</b>	.04
23. I am a person who strives to be the best in everything I do.	<b>.49</b>	.05
<b>Factor 2: Social Interest</b>		
4. I don't have much interest in the person for the first time. (R)	-.14	<b>.68</b>
10. It is useless to intimate with someone for the first time. (R)	-.15	<b>.65</b>
12. When I talk to new people, I wait for them to talk to me.	.05	<b>.56</b>
11. I am willing to talk to anyone I meet for the first time.	.17	<b>.55</b>
8. I am willing to give a hand to anyone in need.	.13	<b>.49</b>
5. I am not good at participating in team work. (R)	.12	<b>.44</b>
9. I am able to act independently for the benefit of others.	.30	<b>.43</b>
1. I treat everyone with compassion.	.05	<b>.42</b>
6. I act based on whether there is a profit or loss for mine. (R)	-.21	<b>.42</b>
Interfactor correlations	F1	.53

*Note.* (R) represents reverse scored items. This table shows the results of exploratory factor analysis of the preliminary version of the courage scale (Table 1). Factor loadings greater than .40 are in boldface. Several items were eliminated because they had factor loadings of less than .40.



**Table 5.** Factor Loadings and Cronbach's Alphas for the Resilience Scale

Constructs	Items	Loadings	Cronbach's $\alpha$ in this research	Cronbach's $\alpha$ in original research
Optimism	Item 1	<b>.81</b>	.79	.77
	Item 2	<b>.73</b>		
	Item 3	<b>.71</b>		
Control	Item 4	<b>.61</b>	.57	.48
	Item 5	<b>.56</b>		
Sociability	Item 6	<b>.53</b>	.84	.77
	Item 7	<b>.85</b>		
	Item 8	<b>.84</b>		
Vitality	Item 9	<b>.73</b>	.78	.77
	Item 10	<b>.84</b>		
	Item 11	<b>.74</b>		
Attempting to solve a problem	Item 12	<b>.64</b>	.59	.58
	Item 13	<b>.61</b>		
	Item 14	<b>.61</b>		
Self- understanding	Item 15	<b>.50</b>	.62	.54
	Item 16	<b>.72</b>		
	Item 17	<b>.63</b>		
Understanding others	Item 18	<b>.48</b>	.59	.67
	Item 19	<b>.65</b>		
	Item 20	<b>.63</b>		
	Item 21	<b>.46</b>		

*Note.* Factor loadings greater than .40 are in boldface.

(Hirano, 2010), as illustrated in Table 5. Therefore, the instrument was considered to have sufficient reliability.

Correlation analysis between the courage and resilience scales was then conducted: All correlations of variables across the courage and resilience subscales were significant ( $r = .21-.68, p < .01-.001$ ) (Table 6).

**Table 6.** Pearson Correlations for Courage and Resilience Scale Factors

	Striving for superiority over self	Social Interest
Optimism	.29***	.25***
Control	.35***	.28***
Sociability	.48***	.68***
Vitality	.65**	.44***
Attempting to solve a problem	.49***	.41***
Self-understanding	.38**	.21***
Understanding others	.39***	.49***

\*\* $p < .01$ . \*\*\* $p < .001$

**Table 7.** Factor Loadings for the Social Support Scale

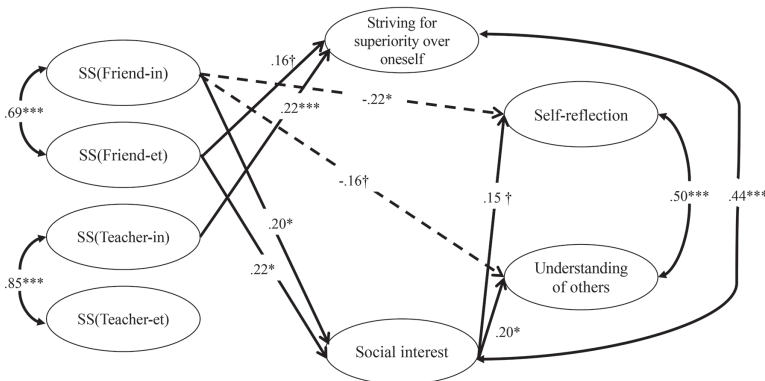
Constructs	Items	Loadings		Cronbach's $\alpha$	
		F	T	F	T
Instrumental support	Item 1	<b>.77</b>	<b>.84</b>	.81	.84
	Item 2	<b>.76</b>	<b>.80</b>		
	Item 3	<b>.65</b>	<b>.75</b>		
	Item 4	<b>.62</b>	<b>.61</b>		
	Item 5	<b>.62</b>	<b>.85</b>		
	Item 6	<b>.50</b>	<b>.66</b>		
Emotional support	Item 7	<b>.83</b>	<b>.81</b>	.88	.90
	Item 8	<b>.77</b>	<b>.84</b>		
	Item 9	<b>.72</b>	<b>.81</b>		

Note. F = social support from the friend; T = social support from the teacher. Factor loadings greater than .40 in boldface.

## Second Analysis Phase

### *CFA of the Social Support Scale*

CFA was performed to examine the structure of the social support scale. The factor loadings and Cronbach's alphas for each factor are shown in Table 7. The model had acceptable fit to the data for both friends and teachers ( $\chi^2 = 147.567$ ,  $df = 26$ ,  $p < .001$ ; GFI = .884; AGFI = .799;



**Figure 3.** Results of the structural equation modeling. SS = social support; in = instrumental; et = emotional. Dotted lines represent significant negative paths and bold lines represent significant positive paths.  $\uparrow p < .10$ .  $*p < .05$ .  $***p < .001$ . Figure by author.

CFI = .929; RMSEA = .129 for friends; and  $\chi^2 = 89.030$ ,  $df = 26$ ,  $p < .001$ ; GFI = .937; AGFI = .891; CFI = .939; RMSEA = .093 for teachers). All items had loadings greater than .40, and all factors had sufficient reliability ( $\alpha = .81-.90$ ).

### Conceptual Change Scores

Of the 296 participants, 92 indicated that they would lend the money, while 203 stated the opposite; one participant gave no response. In total, 76 of the 92 participants who stated that they would lend the money, and 159 of the 203 who stated that they would not, completed the subsequent essay task. These 235 participants were evaluated in terms of self-reflection and understanding of others. A graduate psychology student then analyzed the data from 60 participants (approximately 30% of all participants who completed the essay). The  $\kappa$  values were .89 for self-reflection and .71 for understanding others. According to Landis and Koch (1977), these  $\kappa$  values indicate substantial agreement.

### SEM

SEM was conducted to clarify the relationships among social support, courage, and conceptual change using the data of the 220 participants who completed the essay task and had no missing data. The model showed acceptable fit to the data ( $\chi^2 = 24.200$ ,  $df = 8$ ,  $p < .01$ ; GFI = .974; AGFI = .883; CFI = .973; RMSEA = .096). Instrumental support from

friends had direct, negative effects on self-reflection ( $p < .05$ ) and understanding of others ( $p < .10$ ). Instrumental and emotional support from friends had positive effects on social interest ( $p < .05$ ). Social interest had positive effects on self-reflection ( $p < .10$ ) and understanding of others ( $p < .05$ ). Emotional support from friends and instrumental support from teachers predicted striving for superiority over the self ( $p < .10$  and  $p < .001$ , respectively), but striving for superiority over the self did not predict self-reflection or understanding of others (Figure 3).

## Discussion

The present study developed a courage scale based on Kato's (2020) courage model and considered the relationships among social support, courage, and conceptual change. The first hypothesis was that the factors of the courage scale developed in this study based on Kato's courage model (i.e., striving for superiority over the self and social interest) would have sufficient reliability and validity, which was found to be the case.

The second hypothesis was that all types of social support have a direct negative effect on conceptual change. The SEM results demonstrated that only instrumental support from friends had a direct, negative effect on conceptual change. Therefore,  $H_2$  was partially supported.

The third hypothesis was that all types of social support have an indirect positive effect on conceptual change in the presence of courage. The result demonstrated that social support from friends had an indirect, positive effect on conceptual change in the presence of Social Interest: social support from friends predicted social interest, and social interest predicted self-reflection and understanding of others. Hence,  $H_3$  was partially supported.

These results suggest that the positive relationship between encouragement and boundary crossing requires social interest.

The present findings provide statistical support for previous Adlerian studies. Adler (1954), Brennan (1967), Clark (2016), and Hammond (2015) indicated that social interest enables children to develop an understanding of both themselves and others. These works align with findings that social interest had a positive effect on self-reflection and understanding of others, both of which are aspects of conceptual change.

Although the results of this study largely aligned with earlier ones, some of the findings differed from the expectations, such as the effect of teachers' encouragement; only encouragement from friends influenced social interest. Although this is not consistent with Adler's statement that teachers should be the main source of encouragement, it does support Buote et al. (2007), who found that social support from an intimate

friend was particularly beneficial for university students. In addition, the subjects in this study were adolescent students, whereas Adler targeted school-age children, which may explain why the encouragement offered by friends was more effective than that of teachers in this study.

Despite the finding that encouragement from teachers was ineffective, teachers likely play an important role in facilitating boundary crossing by adolescent students, given that they interact with and influence students on a regular basis.

Adler (1952) stated that a teacher can entrust students with the task of classroom governance so that they can encourage one another and increase their social interest. However, Adler also noted that students sometimes fail to engage in productive communication when attempting to assert their authority. Adler emphasized that the teacher should carefully watch and advise students in such scenarios to ensure that the students interact productively with one another rather than quarreling.

On that basis, and along with this study's findings, teachers must facilitate and respect their students' autonomy and diverse voices, and prompt them to help and encourage one another and thus facilitate social interest. In addition, teachers should interact with their students to an extent that ensures that the students become neither arrogant nor discouraged.

Students are expected to act autonomously rather than wait for teachers to issue instructions and to cooperate with other students. They should not be afraid of voicing their opinions, but they must also listen to others and develop appropriate social interest. Social interest can be promoted in students through teacher interventions that also consider students' autonomy.

## CONCLUSION

This empirical study demonstrates the significance of social interest for boundary crossing. The results indicate that classroom strategies should allow students to actively encourage one another with the aim of promoting social interest. Through such strategies, students may be able to develop the skills required to manage boundary crossing in today's globalized world. This study can contribute to the postpandemic job market, where boundary crossing is becoming increasingly important with more opportunities for face-to-face interactions. In closing, Adler (1954) indicated that the pursuit of one's own interests was possible only through cooperation. As such, the concept of striving for superiority over the self introduced in this study can be better understood by obtaining a deeper understanding of social interest.

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