



The Relationship Between Family Communication Quality and the Career Maturity of Adolescents: The Role of Time Perspective

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Purpose: Family communication quality is an influential factor of career maturity; however, very few studies have investigated the internal mechanisms underlying the relation between family communication quality and career maturity. This study investigated the mediating effect of time perspective on this relation, explored adolescents' time perspective profiles, and examined the relationships among family communication quality, career maturity, and time perspective profiles.

Methods: In this one-year interval longitudinal study, adolescents (67.19% girls; aged 16.10–24.09 years; $n = 442$) reported parent-adolescent communication quality and time perspective at Time 1 and career maturity at Time 2.

Results: The results showed that family communication quality positively predicted adolescents' career maturity, and this relation was mediated by adolescents' Present Fatalistic and Future time perspectives. Additionally, this study identified four time perspective profiles: balanced, moderate, negative, and risk-taking. We further examined how these time perspective profiles are associated with family communication quality and career maturity. The results showed that adolescents' perceptions of high-quality communication with their parents promoted them to endorse a balanced time perspective profile and protected them from endorsing a negative time perspective profile. Moreover, adolescents with a balanced time perspective profile exhibited better development in terms of career maturity, whereas those with a negative time perspective profile reported poor development in terms of career maturity.

Conclusion: Present Fatalistic and Future time perspectives mediated the association between parent-adolescent communication quality and career maturity. Additionally, adolescents who engaged in high-quality communication with parents were more likely to endorse the balanced time perspective profile and less likely to adopt the negative time perspective profile; these adolescents were also more likely to achieve higher levels of career maturity. These findings highlight the necessity of improving parent-adolescent communication quality and guiding adolescents to establish a balanced time perspective profile with the goal of promoting adolescents' career maturity.

Keywords: family communication, career maturity, time perspective, person-oriented approach, adolescent

Introduction

In an increasingly competitive labor market, achieving a high level of career maturity is critical in gaining competitive advantages and successfully building a long-term career.¹ Career maturity is defined as the readiness to make informed, age-appropriate career decisions and to accomplish tasks associated with career development.² An increasing body of research has found that career maturity is closely related to subsequent developmental outcomes, such as individuals' realization of their own potential,³ enhanced social adjustment,³ and a high quality of life.⁴ In light of the crucial role played by career maturity, it is particularly necessary to identify the factors influencing career maturity and implement targeted measures to promote adolescents' development of career maturity. The present study focused on examining whether adolescents' career maturity is influenced by the quality of communication between parents and adolescents. To extend previous research, this study also explored the mechanism underlying this impact and investigated the potential mediating role of adolescents' time perspective. Additionally, by using a person-oriented approach, we tried to

distinguish different profiles of adolescents' time perspective and further examine whether parent-adolescent communication quality influences adolescents' endorsements of various time perspective profiles and whether adolescents with different time perspective profiles exhibit different levels of career maturity.

Parent-Adolescent Communication Quality and Career Maturity

Parental support plays a critical role in adolescents' career development in various ways, such as by providing instrumental assistance, career-related modeling, verbal encouragement and emotional support.⁵ To some extent, the influence of parent support on adolescents' career development is achieved through parent-adolescent communication.⁶ Family communication is the process of exchanging information among family members through verbal and nonverbal forms.⁷ As one of the three core dimensions of marital and family systems,⁸ family communication has important implications for adolescents' career maturity. Previous research has found that high-quality communication between parents and children enables adolescents to achieve high levels of career maturity⁹ and other aspects of positive career development, such as awareness of career barriers,¹⁰ career aspiration,¹¹ rational career decision-making,¹² and career resilience.¹³ High-quality family communication can facilitate the fulfillment of adolescents' psychological need for relatedness, the operation of family function, and the positive development of parent-adolescent relationships.⁸ These familial factors may provide a supportive background for adolescents' career maturity.¹⁴⁻¹⁷ Additionally, by communicating openly with their parents, adolescents have more opportunities to exchange information and attitudes with their parents, acquire strategies pertaining to self-regulation and exploration, and integrate information from different sources.¹⁸ Thus, family communication is an important channel for adolescents' development of career maturity.

Although the association between family communication quality and career development has been established, some limitations of previous studies should be noted. First, most such research has been conducted in the cultural contexts of Canada and Korea,^{9,16,17} whereas very little research has examined this association among Chinese adolescents. At present, the employment situation of young people in China is very difficult, as the country features an unemployment rate of approximately 20% for young people.¹⁹ As parents are important facilitators and consultants of young people's career development, the task of exploring measures that can be implemented at the family level to increase the career maturity of young people is urgent. Additionally, traditional Chinese culture exhibits some unique characteristics, such as emphasizing nonconfrontational and implicit communication.^{20,21} With social change, Chinese culture is interacting with Western cultures, and some Chinese cultural values are changing toward individualism, for instance, showing rising trends of freedom and open-mindedness but declining trends of obedience and restraint.²² Since the development of career maturity depends on the context and historical time,²³ examining this association in the unique Chinese cultural context can extend our understanding of this domain. Second, although several recent studies have examined the mediating factors through which parent-adolescent communication quality can influence adolescents' career development, including self-encouragement,¹¹ self-efficacy,^{10,11} and self-identity,¹² the underlying mechanisms are not yet comprehensively understood. In light of these limitations, we attempted to investigate the link between parent-adolescent communication quality and adolescents' career maturity and to identify factors that mediate this link in the contemporary Chinese cultural context.

The Mediating Effect of Time Perspective

The existing theory and empirical evidence have suggested that time perspective may mediate the association between parent-adolescent communication quality and career maturity. Time perspective is defined as "the manner in which individuals, and cultures, partition the flow of human experience into distinct temporal categories of past, present and future".²⁴ Researchers have divided time perspective into five dimensions.²⁵ Past Negative time perspective reflects the tendency to view the past in a negative or aversive way and to focus on painful, traumatic, or regretful experiences; Past Positive time perspective relates to viewing past experiences or events from a pleasurable, cordial, and sentimental perspective; Present Fatalistic time perspective indicates fatalistic, desperate, or helpless attitudes toward life; Present Hedonistic time perspective reflects hedonistic, pleasure-oriented, and risk-taking attitudes toward life and the tendency to take actions associated with high impulsivity and minimal consideration of future consequences; Future time perspective represents a future-oriented attitude based on setting goals and taking actions to attain these goals.²⁶

Previous research has demonstrated that time perspective is related to family communication quality and adolescents' career maturity.²⁷⁻³¹ Evolutionary life history theory provides a framework for the association between family communication quality and time perspective. This theory emphasizes that time perspective acts as a psychological mechanism that facilitates functional adaptation to environmental conditions.³² When individuals are in positive developmental social environments (eg, environments featuring supportive communication patterns, harmonious interpersonal relations, and adequate physical and psychological safety), they tend to use long-term strategies and endorse a future orientation. In contrast, when individuals are exposed to negative developmental social environments (eg, environments featuring negative communication patterns and unpredictability in terms of personal security), they are more likely to adopt short-term strategies and exhibit a present orientation. According to evolutionary life history theory,³² parent-adolescent communication quality, as a critical aspect of the interpersonal environment, may impact adolescents' time perspective. Empirical research has supported this theory and revealed that Chinese adolescents' communication frequency with their parents in the domain of education and occupation positively predicts their future planning.³¹ Research has also reported that communicating openly with parents promotes the endorsement of a future-oriented time perspective, whereas problems in family communication promote the endorsement of a present-oriented time perspective.³⁰

Regarding the relations between time perspective and career maturity, prior research has concentrated mainly on the influence of Future time perspective on career maturity and consistently found that Future time perspective can promote the development of career maturity.^{27,33,34} When individuals having a high level of Future time perspective, they are inclined to trade present pleasure for future goals and devote more efforts to preparedness, such as gaining knowledge of careers, exploring themselves to make appropriate career decisions, and making plans for the future, which enables such individuals to achieve high levels of career maturity.^{26,27,34} However, few studies have investigated the relations between other dimensions of time perspective and career maturity. Based on these studies, we can draw only a rough conclusion concerning these relations. Generally, Past Negative and Present Fatalistic time perspectives hinder the development of career maturity.^{28,29} When people constantly recall past negative experiences and hold fatalistic beliefs regarding their futures and lives, they are less likely to make efforts to thrive, including developing career maturity. With regard to the link between Present Hedonistic time perspective and career maturity, the extant research has not reached a consistent conclusion. Some research has found that Present Hedonistic time perspective is insignificantly associated with career maturity,²⁸ whereas other research has found a negative association between this time perspective and career maturity.²⁹

In summary, adolescents' time perspectives are related to family communication quality and generally influence their career maturity. Therefore, time perspective may be a mediating factor in the relation between family communication quality and adolescents' career maturity. Investigating the mediating effect of time perspective is critical for understanding both the connection between family communication quality and career maturity and developing effective intervention strategies for promoting adolescents' career maturity.

Time Perspective Profiles

Time perspective is a multidimensional construct. In one aspect, previous research has investigated the relations between each dimension of time perspective and parent-adolescent communication quality and career maturity by using variable-oriented approaches, which helps us understand the associations between specific dimensions of time perspective and other variables.^{27,28,30} In another aspect, considering the different dimensions of time perspective simultaneously can provide a comprehensive overview of time perspective. Therefore, it is also valuable to integrate the dimensions of time perspective and distinguish subsamples of adolescents who exhibit different patterns of time perspectives by using the person-oriented approach. Several studies have used the person-oriented approach to identify time perspective profiles and found different profiles across various samples. For instance, Boniwell et al found that British adolescents displayed four distinct time perspective profiles: hedonistic present-oriented, future-oriented, negative, and balanced time perspective profiles.³⁵ In addition to these four profiles, the risk-taking profile was also identified in the Russian sample,³⁵ whereas the moderately fatalistic profile was discovered by analyzing data collected in 23 countries.³⁶

These studies have sampled adolescents from various cultural backgrounds and distinguished different time perspective profiles; however, they have consistently discovered a balanced time perspective, which is characterized by low scores on the Past Negative and Present Fatalistic subscales, a moderately high score on the Future subscale, and a high

score on the Past Positive subscale.³⁷ Furthermore, they have consistently found that adolescents with a balanced time perspective profile attain better developmental outcomes.^{35,38} The balanced time perspective reflects “an idealized mental framework that allows individuals to flexibly switch temporal frames among past, future, and present depending on situational demands, resource assessments, or personal and social appraisals.”²⁵ Adolescents with a balanced time perspective profile are more efficient in dealing with different situations, which facilitates them achieving better development.

Although these studies have made some progress in exploring time perspective profiles, very little research has investigated the typical time perspective profiles among mainland Chinese adolescents or examined how time perspective profiles are linked to family communication quality and career maturity. Since individuals’ time perspective profiles depend on broad cultural contexts,³⁷ exploring the time perspective profiles in the Chinese cultural context can improve our understanding of this domain.

The Present Study

The overall goal of this study was to investigate the relations between parent-adolescent communication quality, career maturity, and time perspective among mainland Chinese adolescents. Specifically, the present study had four major aims: (1) to examine the relation between parent-adolescent communication quality and adolescents’ career maturity, (2) to explore the mediating effects of adolescents’ time perspective on this relation, (3) to identify typical time perspective profiles by using the person-oriented approach, and (4) to investigate the relations between adolescents’ time perspective profiles, parent-adolescent communication quality, and adolescents’ career maturity. We hypothesized that the quality of parent-adolescent communication is positively associated with adolescents’ career maturity and that adolescents’ time perspective mediates this association. As this is exploratory research on the profiles of time perspective in the Chinese cultural context, we did not propose hypotheses regarding what typical profiles of time perspective would be identified. However, we predicted that time perspective profiles that are positive and consistent with Chinese cultural values are positively associated with the quality of family communication and career maturity.

Method

Participants

We used G*Power to calculate the minimum sample size with the option of power = 0.95. The result found that a total sample of 146 could reach the requirement. In this longitudinal study, 550 Chinese adolescents (65.01% girls; $M_{age} = 18.97 \pm 0.89$ years, age range: 16.10–24.09 years) participated in this study at the first time point (T1). One hundred and eight students were excluded because of their withdrawal from this study at the second time point (T2). In the final data set, 442 Chinese adolescents (67.19% girls) were retained. Except for Future time perspective, none of the study variables at T1 were significantly different between the missing and retained individuals (see [Supplemental Material: Table S1](#)).

Procedures

By using the cluster sampling method, we recruited participants from 2 universities in urban areas in China during two assessments. Before the data collection, we explained the purposes and procedures of the current study to all participants and their parents and obtained written informed consent from them. During the process of collecting data, we administered self-reported questionnaires to the participants and instructed them to fill out the questionnaires. Participants rated family communication quality and time perspective at T1 and career maturity at T2 one year later. It took 20 to 30 minutes to complete the questionnaires. This study complied with the Declaration of Helsinki and obtained ethical approval from the institutional review board of Shandong Women’s University.

Measures

Family Communication Quality

Adolescents' perceptions of family communication quality were assessed by the Chinese version of the Parent-Adolescent Communication Scale.^{39,40} This scale contains two subscales. The open family communication subscale (10 items; eg, "If I were in trouble, I could tell my mother/father") measures the perception of the freedom to share opinions and information when communicating with parents. The problems in family communication subscale (10 items; eg, "I'm careful about what I say to my mother/father") measures obstacles in parent-adolescent communication, such as lacking sharing feelings and having negative feelings in the process of communication. Each item was assessed on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Prior to data analysis, we recoded the scores of the problems in family communication subscale, with higher scores indicating fewer problems. In this study, the open family communication subscale (father: $\alpha = 0.85$; mother: $\alpha = 0.85$) and the problems in family communication subscale (father: $\alpha = 0.76$; mother: $\alpha = 0.77$) both had good reliability. The structural validity of this scale was examined by confirmatory factor analysis (CFA), and the results showed acceptable model fit (father: RMSEA = 0.051, CFI = 0.93, TLI = 0.92; mother: RMSEA = 0.052, CFI = 0.92, TLI = 0.91).

Time Perspective

Adolescents' time perspective was assessed by the Chinese version of Zimbardo's Time Perspective Inventory.^{25,36} This scale measures five different dimensions: Past Positive (6 items; eg, "It gives me pleasure to think about my past"), Past Negative (7 items; eg, "I think about the bad things that have happened to me in the past"), Present Hedonistic (10 items; eg, "I take risks to put excitement in my life"), Present Fatalistic (5 items; eg, "Fate determines much in my life"), and Future (9 items; eg, "When I want to achieve something, I set goals and consider specific means for reaching those goals"). Participants rated each item on a 5-point scale ranging from 1 (*very uncharacteristic*) to 5 (*very characteristic*). The internal consistency of the subscales was acceptable in the current study (Past Positive: $\alpha = 0.76$, Past Negative: $\alpha = 0.69$, Present Hedonistic: $\alpha = 0.69$, Present Fatalistic: $\alpha = 0.72$; Future: $\alpha = 0.73$). As shown by the results of CFA, the structural validity of this scale was good (RMSEA = 0.052, CFI = 0.95, TLI = 0.93).

Career Maturity

The Career Maturity Questionnaire for College Students was utilized to measure adolescents' career maturity.⁴¹ This questionnaire contains six dimensions: career exploration (5 items; eg, "I learned about the career through newspapers, magazines, books, etc"), self-cognition (5 items; eg, "I will take the initiative to understand the requirements of professional quality in the future workplace and improve my professional quality"), target plan (5 items; eg, "I have my own plans for my future career development"), self-control (5 items; eg, "I will proactively seek and create the opportunities for further education and training to improve my competitiveness"), interpersonal relationship (5 items; eg, "I usually focus on socializing and interacting with peers who can help me in my career development"), and feedback correction (2 items; eg, "In the last year, my view of the employment situation has changed"). Participants reported each item on a 4-point scale ranging from 1 (*totally untrue*) to 4 (*totally true*). The questionnaire had good internal consistency in this study ($\alpha = 0.92$). The results of CFA showed that the structural validity of this scale was acceptable (RMSEA = 0.051, CFI = 0.93, TLI = 0.91).

Analysis Plan

We conducted structural equation modeling by using Mplus 7.4 to analyze the relationship among parent-adolescent communication quality, adolescents' time perspective, and career maturity.⁴² We estimated both the total effect model and the mediation model. The total effect model examined the relation between family communication quality and adolescents' career maturity; the mediation model examined the mediating role of time perspective on this relation by using bias-corrected bootstrapping with 5000 resamples. In these models, parent-adolescent communication quality and career maturity were modeled as latent variables based on the subscales (see Figure 1). We averaged the scores from mother and father to generate the scores of communication quality with parents in these models. The overall model fit was acceptable when the root mean square error of approximation (RMSEA) ≤ 0.08 , as well as the Tucker-Lewis index (TLI) and comparative fit index (CFI) ≥ 0.90 .⁴³

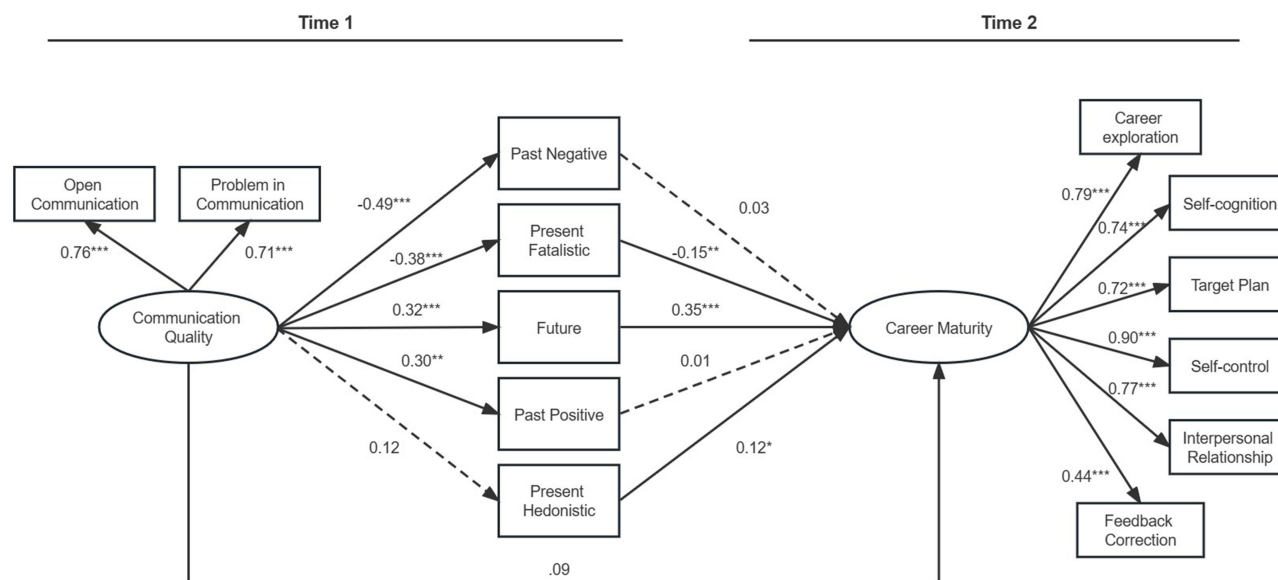


Figure 1 The mediation model: Time perspective as the mediator between family communication quality and career maturity.

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Latent profile analysis was used to identify different profiles based on adolescents' responses to the five dimensions of time perspective. Several statistical criteria were adopted to determine the optimal solution: the Bayesian information criterion (BIC), the Akaike's information criterion (AIC), the sample-size-adjusted Bayesian information criterion (ABIC), Lo-Mendell-Rubin likelihood ratio test (LMR-LRT), and entropy. Lower values of BIC, AIC, and ABIC indicated a better model fit. LMR-LRT was utilized to compare models with different profiles, and a significant value ($p < 0.05$) showed that the current model with k profiles was superior to the model with $(k - 1)$ profiles. The classification quality was measured by entropy, and an entropy value higher than 0.60 indicated that the classification quality was acceptable.⁴⁴

Subsequently, regression mixture modeling was used to investigate the relations among adolescents' time perspective profiles, parent-adolescent communication quality, and career maturity. The 3-step approach was used to examine whether parent-adolescent communication quality would predict adolescents' time perspective profiles.⁴⁵ The BCH method was employed to examine whether adolescents with different time perspective profiles would have different levels of career maturity.⁴⁶

Results

Descriptive Statistics

Table 1 displays the means, standard deviations, and correlations of family communication quality, career maturity, and time perspective. Communication quality was positively correlated with career maturity. Communication quality and career maturity were positively related to Present Hedonistic, Future, and Past Positive time perspectives but negatively related to Past Negative and Present Fatalistic time perspectives.

The Mediating Effect of Time Perspective

The total effect model fit the data well (RMSEA = 0.065, CFI = 0.97, TLI = 0.96). The total effect of family communication quality on adolescents' career maturity was positive ($\beta = 0.28$, 95% CI [0.18, 0.38]). After adding adolescents' time perspective as the mediator, the model fit was also acceptable (RMSEA = 0.059, CFI = 0.96, TLI = 0.94). As shown in Table 2, Future and Present Fatalistic time perspectives mediated the relation between family communication quality and career maturity. However, the mediating effects of Past Negative, Past Positive, and Present Hedonistic time perspectives were not significant. As shown in Figure 1, communication quality was positively linked to

Table 1 Means, Standard Deviation, and Correlations of Family Communication Quality, Career Maturity, and Time Perspective

Variables	M	SD	1	2	3	4	5	6	7
1 Communication quality	3.43	0.59	—						
2 Career maturity	3.51	0.52	0.19***	—					
3 Past Negative	3.17	0.60	-0.42***	-0.09*	—				
4 Present Hedonistic	3.71	0.49	0.10*	0.27***	0.13**	—			
5 Future	3.69	0.51	0.27***	0.43***	-0.14**	0.36***	—		
6 Past Positive	3.81	0.63	0.25***	0.20***	-0.04	0.40***	0.29***	—	
7 Present Fatalistic	2.63	0.69	-0.32***	-0.25***	0.46***	-0.02	-0.34***	-0.12*	—

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2 The Effects of Family Communication Quality on Career Maturity via Time Perspective

Path	Standardized Estimate	95% CI
Direct effect		
Communication quality → career maturity	0.09	[-0.10, 0.24]
Total indirect effect		
Communication quality → career maturity	0.17 ^a	[0.08, 0.26]
Specific indirect effect		
Communication quality → Past Negative → career maturity	-0.02	[-0.08, 0.04]
Communication quality → Present Hedonistic → career maturity	0.01	[-0.01, 0.06]
Communication quality → Future → career maturity	0.11 ^a	[0.06, 0.17]
Communication quality → Past Positive → career maturity	0.002	[-0.03, 0.04]
Communication quality → Present Fatalistic → career maturity	0.06 ^a	[0.02, 0.11]

Notes: ^aEmpirical 95% confidence interval excludes zero.

adolescents' Future time perspective but negatively linked to Present Fatalistic time perspective. In turn, Future time perspective positively predicted adolescents' career maturity at Time 2, but Present Fatalistic time perspective negatively predicted adolescents' career maturity at Time 2.

We also conducted supplemental analyses to strengthen our results. Although the direction of the relation between family communication quality and adolescents' time perspective was supported by evolutionary life history theory,³² these variables were concurrently measured. Therefore, we examined an alternative model in which adolescents' time perspective predicted career maturity through family communication quality. The results showed that the fitness indexes of the alternative model were worse than those of the original model (RMSEA = 0.069, CFI = 0.94, TLI = 0.91). No mediating paths were significant in the alternative model (see [Supplemental Material: Table S2](#)). Considering the theoretical background and the results of the statistical analysis, the original model was preferred. In addition, we separately examined the effects of communication quality with mothers and fathers on adolescents' career maturity through time perspective. The results of these models were similar to those of the original mediation model (see [Supplemental Material: Table S3](#) and [Table S4](#)). The reason may be that the scores of communication quality with mothers and fathers were highly correlated (open communication: $r = 0.85$; problems in communication: $r = 0.91$). We also examined whether the mediation model differed among adolescents of different genders or grades. The results revealed that the mediation model was not different between various genders or grades (gender: $\Delta\chi^2(5) = 3.45$, grade: $\Delta\chi^2(5) = 5.28$, $ps > 0.05$).

Time Perspective Profile

Latent profile analysis was used to distinguish meaningful time perspective profiles. As displayed in [Table 3](#), the values of BIC, AIC, and ABIC decreased when shifting from the model with one profile to the model with six profiles. As

Table 3 Values for Different Model Parameterizations

Model	AIC	BIC	ABIC	LMR-LRT	<i>p</i> value	Entropy
1 profile	3859.41	3900.33	3868.59	–	–	–
2 profiles	3735.15	3800.61	3749.84	132.63	0.02	0.60
3 profiles	3674.80	3764.81	3694.99	70.43	0.44	0.58
4 profiles	3601.29	3715.85	3626.99	83.23	0.02	0.70
5 profiles	3563.34	3702.44	3594.54	48.62	0.12	0.75
6 profiles	3556.28	3719.93	3592.99	18.55	0.65	0.78

indicated by the results of LMR-LRT, the four-profile solution was superior to the three-profile solution ($p = 0.02$). With regard to the four-profile solution, the value of entropy was higher than 0.60 (entropy = 0.70), indicating that the classification quality was acceptable. According to these statistical criteria, the four-profile solution was supported.

Figure 2 shows the four identified profiles of time perspective and the dimensional scores of time perspective on different profiles. Profile 1 ($n = 248$, 56.11%) was named the “moderate time perspective profile”. Compared with other profiles, this profile was characterized by moderate levels of all time perspective dimensions. Profile 2 ($n = 46$, 10.41%) was named the “balanced time perspective profile”. Adolescents with this profile had low levels of Past Negative and Present Fatalistic time perspectives and high levels of Past Positive, Present Hedonistic, and Future time perspectives. Profile 3 ($n = 79$, 17.87%) was named the “negative time perspective profile”. Adolescents with this profile reported high levels of Past Negative and Present Fatalistic time perspectives as well as low levels of Past Positive, Present Hedonistic, and Future time perspectives. Profile 4 ($n = 69$, 15.61%) was named the “risk-taking time perspective profile”. Adolescents with this profile reported high levels of Past Negative, Present Fatalistic, and Present Hedonistic time perspectives and moderately high levels of Past Positive and Future time perspectives. The results of ANOVA showed that the dimensional scores of time perspective varied significantly across time perspective profiles (see Table 4). Additionally, Cohen’s d effect sizes are presented in Table 5 to reflect the standardized mean differences in the dimensions of time perspective across the four latent profiles.

Subsequently, we examined the associations between family communication quality and these time perspective profiles. The results revealed that relative to the moderate time perspective profile, family communication quality

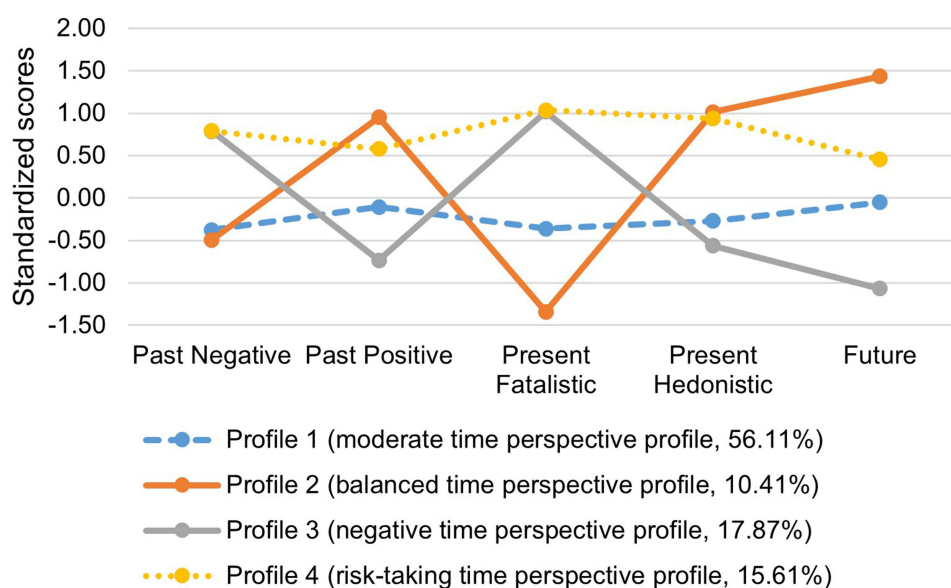
**Figure 2** Time perspective profiles.

Table 4 The Dimensional Scores of Time Perspective on Different Profiles

	Profile 1 M(SD)	Profile 2 M(SD)	Profile 3 M(SD)	Profile 4 M(SD)	F	Post-Hoc Pairwise Comparison
Past Negative	-0.38(0.75)	-0.50(1.17)	0.79(0.74)	0.79(0.93)	66.92***	3 and 4 > 1 and 2
Present Hedonistic	-0.27(0.79)	1.01(0.85)	-0.56(0.78)	0.94(0.89)	75.92***	2 and 4 > 1 > 3
Future	-0.05(0.74)	1.43(0.72)	-1.07(0.75)	0.46(0.76)	120.81***	2 > 4 > 1 > 3
Past Positive	-0.10(0.84)	0.95(0.96)	-0.73(0.97)	0.58(0.77)	48.51***	2 > 4 > 1 > 3
Present Fatalistic	-0.37(0.60)	-1.34(0.60)	1.02(0.64)	1.04(0.68)	233.52***	4 and 3 > 1 > 2

Notes: Profile 1 = moderate time perspective profile, Profile 2 = balanced time perspective profile, Profile 3 = negative time perspective profile, Profile 4 = risk-taking time perspective profile. *** $p < 0.001$.

Table 5 Cohen's Ds for Comparisons of Time Perspective Between Different Profiles

	Profile 1 vs Profile 2	Profile 1 vs Profile 3	Profile 1 vs Profile 4	Profile 2 vs Profile 3	Profile 2 vs Profile 4	Profile 3 vs Profile 4
Past Negative	0.24	-1.22	-1.23	-1.46	-1.47	-0.01
Present Hedonistic	-1.41	0.28	-1.36	1.69	0.05	-1.64
Future	-1.70	1.16	-0.59	2.86	1.10	-1.76
Past Positive	-1.09	0.63	-0.73	1.72	0.36	-1.36
Present Fatalistic	1.38	-1.94	-1.87	-3.33	-3.25	0.08

Notes: Profile 1 = moderate time perspective profile, Profile 2 = balanced time perspective profile, Profile 3 = negative time perspective profile, Profile 4 = risk-taking time perspective profile.

positively predicted the endorsement of the balanced time perspective profile ($B = 1.30$, $p < 0.05$) but negatively predicted the endorsement of the negative time perspective profile ($B = -2.31$, $p < 0.001$).

The findings regarding the links between adolescents' time perspective profiles and career maturity showed that compared with adolescents with a moderate time perspective profile, adolescents with a balanced time perspective profile reported higher levels of career maturity ($\chi^2 = 22.08$, $p < 0.001$), whereas adolescents with a negative time perspective profile reported lower levels of career maturity ($\chi^2 = 24.00$, $p < 0.001$). Adolescents with a risk-taking time perspective profile and those with a moderate time perspective profile reported similar levels of career maturity ($\chi^2 = 3.86$, $p = 0.049$).

Discussion

The present study aimed to examine the association between family communication quality and adolescents' career maturity in the contemporary Chinese cultural context and to explore the role of time perspective in this link simultaneously using variable-oriented and person-oriented approaches. On the one hand, we investigated the mediating effect of adolescents' time perspective on the association between family communication quality and adolescents' career maturity by using a variable-oriented approach. On the other hand, we identified time perspective profiles by using a person-oriented approach and investigated whether adolescents' time perspective profiles are dependent on parent-adolescent communication quality and whether these profiles influence adolescents' career maturity. This study extends our knowledge regarding the role of time perspective in the relationship between family communication quality and adolescents' career maturity from multiple perspectives.

Parent-Adolescent Communication Quality and Career Maturity

As hypothesized, our findings showed that high-quality communication between parents and adolescents can enhance adolescents' career maturity, which is consistent with previous research.⁹ When they communicate openly with their parents, adolescents have more opportunities to express their opinions and feelings.⁴⁷ In this process, adolescents may receive parental support and perceive cohesion with their parents.⁸ These familial factors provide a supportive

psychological background in which adolescents can achieve career maturity. Furthermore, through open communication, adolescents can exchange information and opinions with parents, obtain advice and guidance from parents, and acquire skills pertaining to self-regulation and planning, which is beneficial for adolescents' career development.^{10,12} In contrast, problems in communication, such as a lack of communication, hesitation to disclose experiences, and negative interactions, are detrimental to adolescents' development of career maturity.^{8,11} This result extends our understanding of the association between family communication quality and career maturity in a non-Western cultural context. We speculated that this result may also be related to Chinese culture. With social change, Chinese culture is changing from a focus on obedience and restraint toward an emphasis on freedom and openness.²² Changes in cultural values have influenced the communication styles between parents and children; for example, family members expect to communicate more openly and directly with each other.⁴⁸ This situation provides a favorable context for the positive effect of high-quality family communication. Future research should consider the effects of cultural values and examine the relationship between parent-adolescent communication quality and career maturity across cultures.

The Mediation of Time Perspective

In addition to its direct effect, parent-adolescent communication quality also has indirect effects on adolescents' career maturity through Present Fatalistic and Future time perspectives. The findings are basically consistent with the proposed hypothesis and support evolutionary life history theory. According to evolutionary life history theory,³² parent-adolescent communication is an important aspect of the family environment that impacts adolescents' development of time perspective. Openly communicating with parents creates a supportive environment that promotes adolescents to adopt a long-term strategy — endorsing the future-oriented time perspective (eg, making plans for their future and trying to attain future goals). Additionally, receiving support by openly communicating with their parents is also conducive to eliminating adolescents' helpless or hopeless feelings regarding their lives, which makes adolescents less likely to adopt the Present Fatalistic time perspective.³⁰ In turn, adolescents' time perspectives can influence their development of career maturity.^{27–29,34} As establishing a career is a salient future-oriented task, adolescents who have Future time perspective make more efforts to prepare for their careers, resulting in high levels of career maturity.^{27,33,34} In contrast, when adolescents hold fatalistic beliefs about their lives and future, they are constrained to the present and less motivated to crystallize their vocational interests, collect career information, or make career decisions.²⁹

With regard to the insignificant mediating effects of Present Hedonistic, Past Positive, and Past Negative time perspectives, the Chinese cultural context and the nature of career maturity may account for these results. In one aspect, the traditional Chinese cultural background may influence adolescents' endorsement of Present Hedonistic time perspective. Due to the deep influence of traditional Chinese culture, parents are more likely to endorse the values of plain living and hard work instead of hedonism.^{49,50} Through high-quality family communication, parents tend to transmit these traditional cultural values to their children and discourage adolescents from indulging themselves in present pleasure, which may make Present Hedonistic time perspective an insignificant mediator in this context. In another aspect, the nature of career maturity may weaken the relations between past-oriented time perspectives and career maturity. Career maturity is a developmental task for university students that is oriented toward the future.^{27,51} This task requires individuals to prepare for their careers and to make career decisions based on their present situations and expectations regarding the future. However, past-oriented time perspectives may deviate from the requirements of this developmental task and reduce adolescents' devotion to preparing for their careers. This may result in the insignificant mediating effects of past-oriented time perspectives. Future research needs to further examine the influential factors that may account for the insignificant mediating effects of Present Hedonistic, Past Positive, and Past Negative time perspectives.

Time Perspective Profiles

This study explored how adolescents integrated the five dimensions of time perspective and identified four profiles of time perspective: balanced, moderate, negative, and risk-taking. The results are similar to those of previous research.^{35,38} For example, balanced and negative/maladaptive time perspective profiles emerged in samples from Britain, Russia, Hong Kong, and Singapore,^{35,38} and the risk-taking time perspective profile emerged in the Russian sample.³⁵ However, there were some discrepancies in time perspective profiles between our research and other research. For instance, the hedonistic present-oriented time perspective profile did not emerge in our study, whereas it emerged in both British and Russian samples.³⁵ The

unique cultural context appears to be vitally important for explaining this result. Traditional Chinese culture emphasizes hard work and preparation for the future,^{49,50} which conflicts with the distinctive characteristics of the hedonistic present-oriented time perspective profile, such as a high score on the Present Hedonistic subscale and a low score on the Future subscale.³⁵ This may cause adolescents to be unlikely to endorse a hedonistic present-oriented time perspective profile in the Chinese cultural context. Further research is needed to investigate the generalizability of these profiles among adolescents in various cultural contexts and to explore the factors that may influence time perspective profiles.

After identifying four time perspective profiles, we examined how these profiles are linked to parent-adolescent communication quality and adolescents' career maturity. As predicted, high-quality family communication facilitates adolescents to develop a balanced time perspective profile and protects them from endorsing the negative time perspective profile. In an open, safe, and predictable emotional environment, adolescents can acquire more supportive psychological resources and have more advantages in developing a balanced time perspective profile.³² Adolescents with a balanced time perspective profile can flexibly change their time perspectives according to the requirements of the tasks and life situations they face.³⁷ For instance, when they make efforts to prepare for their careers, they may be future-oriented (eg, anticipating the consequences of their present actions); when exploring career interests and communicating these interests with parents and peers, they may concentrate on immediate pleasure and recall positive memories.^{37,52} Additionally, they usually do not have the proclivity to negatively evaluate past experiences or to feel fatalistic about the present. In summary, the balanced time perspective profile can help adolescents efficiently adapt to different situations concerning their careers. Therefore, they are more likely to achieve career maturity. In contrast, adolescents with a negative time perspective profile are less flexible in different situations, and they are inclined to passively evaluate past experiences and hold helpless or hopeless beliefs about their lives. Holding these negative beliefs can hinder them from developing career maturity.

Practical Implications and Future Directions

Previous research has proposed programs for directly guiding adolescents to prepare for their careers.⁵³ Some programs with a focus on contextual variables and individuals' psychological resources can also be effective in promoting adolescents' career maturity. This study suggests that high-quality family communication plays an important role in promoting adolescents to endorse a balanced time perspective profile and to attain a high level of career maturity. Therefore, targeted programs should be implemented to improve parent-adolescent communication quality with the goal of encouraging parents to be supporters and facilitators of adolescents' career maturity. For example, school counselors can help enhance family communication quality by informing family members about communication skills, guiding them to increase their willingness to engage in positive communication, and helping them eliminate communication problems. Simultaneously, it is necessary to develop training programs focusing on cultivating adolescents' balanced time perspective (eg, teaching adolescents strategies for adjusting their time perspectives based on developmental tasks or events, guiding them to establish orientations toward positive time perspectives, and helping them change negative time perspectives). Creating positive communication environments in the family and developing a balanced time perspective may effectively contribute to adolescents' positive development.

The findings of this research highlight some possible avenues for future research to advance our understanding of this domain. First, since both family communication patterns and time perspective profiles depend on broad cultural backgrounds,^{37,54} comparing the effects of these variables on career maturity across cultures would help us understand how cultural values shape individuals' family interactions and time perspective profiles, and whether their effects on career maturity differ across cultural backgrounds. In turn, culturally specific promotion programs can be developed. Another avenue for future research is to explore the dynamic interactions among multiple levels of contextual factors and the development of career maturity across a broader age range. According to the perspective of developmental contextualism,²³ it is necessary to use long-term longitudinal research designs to systematically investigate how multiple levels of contextual factors (eg, cultural values, community factors, and family functions) interact dynamically with individuals' career maturity.

Contributions and Limitations

The present study makes several noteworthy contributions. First, this study extends previous research by demonstrating that adolescents' time perspective also plays an important role in mediating the link between family communication quality and

adolescents' career maturity in addition to the previously discussed roles of self-encouragement,¹¹ self-efficacy,^{10,11} and self-identity.¹² Second, we explored the typical profiles of time perspective among mainland Chinese adolescents and investigated the links between these profiles and both parent-adolescent communication quality and career maturity. The results help us understand adolescents' tendencies to manage the five dimensions of time perspective. Third, this study was conducted in the Chinese cultural context, extending our knowledge on the relationships among family communication quality, career maturity, and time perspective in a non-Western cultural context. Fourth, the findings of the present research also have some important practical implications that are beneficial for the enhancement of career maturity.

Despite these contributions, there are several limitations in the current research. First, this research tested only the mediating role of adolescents' time perspective on the association between parent-adolescent communication quality and adolescents' career maturity. Other mediators should be tested to expand our understanding of this relationship. For instance, some variables associated with family function (eg, family cohesion and adaptability) and psychological resources (eg, self-esteem) can be investigated as possible mediators. High-quality family communication can promote the operation of family function and the development of psychological resources,^{8,55,56} which may in turn facilitate the achievement of career maturity.^{15,57} Furthermore, previous research has demonstrated that parent-child interactions and relationships affect adolescents' peer interactions and that adolescents' career maturity is influenced by their peers.^{58,59} Therefore, some variables of peer interactions can be included in the model. Second, in the research design, family communication quality and time perspective were measured concurrently. Hence, the predictive relations between these variables were not clear. Future research should use a three-wave longitudinal research design to confirm these results. Third, this research recruited mainland Chinese adolescents who attended universities in urban areas as participants. Data were not collected on adolescents who did not attend college or those who dropped out of school. Therefore, caution should be taken when generalizing the findings to other cultural milieus, other groups, or other areas. Although this study randomly selected the universities and tried to increase the representativeness of the sample, only two universities were selected, which may limit the generalizability of this study. Future research should select more universities and consider adolescents who did not attend college or dropped out of school. Fourth, the participants retained in this study reported a higher level of Future time perspective than the individuals for whom data were missing. Therefore, the effect of this time perspective should be interpreted with caution.

Conclusions

The present study makes the first attempt to examine time perspective as a mechanism underlying the effect of family communication quality on career maturity among Chinese adolescents. The findings extended previous research by elucidating that Present Fatalistic and Future time perspectives mediate the association between parent-adolescent communication quality and career maturity. Additionally, this study identified four time perspective profiles: moderate, balanced, negative, and risk-taking. Adolescents who engage in high-quality communication with parents are more likely to endorse the balanced time perspective profile and less likely to have the negative time perspective profile, and these adolescents have a greater probability of achieving higher levels of career maturity. This study can improve our understanding of the complex relations among these variables and provide valuable information for implementing targeted strategies to promote adolescents' career maturity, such as designing programs that can enhance family communication quality and develop adolescents' balanced time perspective profile.

Data Sharing Statement

The data of this study are available from the first author on request.

Disclosure

The authors declare no conflicts of interest in this work.

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