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Dynamic mechanism of constructing future time perspective in a daily life and life-span development

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Future Time Perspective (FTP) is defined as a cognitive-motivational construct of an individual's perception of their personal future. How do people consciously construct their FTP? This study presents case studies using both daily data (over 19 days) and longitudinal data (spanning 33 years), focusing on how goal-directedness (a measure of FTP) and hope interact to shape their trajectories. The results show that hope is high when individuals experience a connection between the present and future, accompanied by the integration of affect, cognition, and behavior. In contrast, perceived uncertainty reduces hope. Importantly, goal-directedness increases when individuals consciously set goals, make plans, and take actions for the future. This study sheds light on the conscious construction of FTP by being among the first to examine within-individual variability by combining both daily and longitudinal data in time perspective research.

Keywords: Future Time Perspective (FTP), Motivation, Life-span development, Experience sampling method.

Mecanismo dinámico de construcción de la perspectiva temporal futura en la vida cotidiana y el desarrollo vital

La perspectiva de futuro (FTP, por sus siglas en inglés) se define como un constructo cognitivo-motivacional que describe la percepción de un individuo sobre su futuro personal. ¿Cómo construyen conscientemente las personas su FTP? Este estudio presenta estudios de caso utilizando tanto datos diarios (durante 19 días) como datos longitudinales (a lo largo de 33 años), centrándose en cómo la orientación hacia metas (una medida de FTP) y la esperanza interactúan para dar forma a sus trayectorias. Los resultados muestran que

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la esperanza es alta cuando los individuos experimentan una conexión entre el presente y el futuro, acompañada por la integración de afecto, cognición y comportamiento. En contraste, la incertidumbre percibida reduce la esperanza. Además, la orientación hacia metas aumenta cuando los individuos establecen objetivos, elaboran planes y toman acciones para el futuro. Este estudio arroja luz sobre la construcción consciente de la FTP y es uno de los primeros en examinar la variabilidad intraindividual, combinando datos diarios y longitudinales en la investigación sobre la perspectiva temporal.
Palabras clave: Perspectiva de futuro (FTP), Motivación, Desarrollo a lo largo de la vida, Método de muestreo de experiencias.

Mecanismo dinâmico de construção da perspectiva de tempo futuro na vida cotidiana e no desenvolvimento do ciclo de vida

A Perspectiva de Tempo Futuro (FTP) é definida como um constructo cognitivo-motivacional da percepção de um indivíduo sobre seu futuro pessoal. Como as pessoas constroem conscientemente sua FTP? Este estudo apresenta estudos de caso utilizando tanto dados diários (ao longo de 19 dias) quanto dados longitudinais (abrangendo 33 anos), focando em como a orientação para metas (uma medida de FTP) e a esperança interagem para moldar suas trajetórias. Os resultados mostram que a esperança é alta quando os indivíduos experimentam uma conexão entre o presente e o futuro, acompanhada pela integração de afeto, cognição e comportamento. Em contraste, a incerteza percebida reduz a esperança. Além disso, a orientação para metas aumenta quando os indivíduos estabelecem objetivos, fazem planos e tomam ações para o futuro. Este estudo esclarece a construção consciente da FTP e está entre os primeiros a examinar a variabilidade intra-individual combinando dados diários e longitudinais na pesquisa sobre perspectiva temporal.
Palavras-chave: Perspectiva de Tempo Futuro (FTP), Motivação, Desenvolvimento ao longo da vida, Método de amostragem de experiências.

Psychological time perspective refers to an individual's subjective experience of the past, present, and future (Lens et al., 2012, p. 322). Future Time Perspective (FTP) is understood as a cognitive-motivational construct, characterized by both its content (i.e., what individuals are striving for) and its extension or depth (i.e., how far into the future individuals set their goals) (Lens et al., 2012). FTP theory suggests that having a long and well-constructed FTP—where present goals are meaningfully connected to future goals, and the content of those goals is significant—can lead to various adaptive outcomes for individuals, including enhanced motivation, health, and well-being (Andre et al., 2018; Lens et al., 2012).

Creating a long and well-constructed FTP involves connecting the present to the future. In this process, Peetsma (Peetsma, 1985; Peetsma et al., 2017) emphasized the importance of integrating the affective component (i.e., positive feelings toward a particular life domain in the future) with the cognitive component (i.e., ideas or expectations about the future) and the behavioral intention/behavior component (i.e., the extent to which people are inclined to act in ways that help achieve future goals). This integration enhances FTP as a powerful motivator (Andre et al., 2018). In this sense, FTP represents the internalization of valued goals, either in the present or the future, along with the determination to achieve them.

Peetsma et al. (2017) also emphasized the importance of making goals personally relevant by ensuring they are concrete and realistic (Peetsma et al., 2017; Schuitema et al., 2014). Furthermore, Andre et al. (2018) highlighted that a domain-specific FTP (i.e., having a goal in a specific life domain, such as career or education) has a stronger relationship with educational outcomes than a more generalized FTP. Based on this, the present study focuses on how individuals construct FTP in real life, as it is shaped by the interaction between the individual and personal context.

We explore this process using daily data at a micro level and long-term longitudinal data at a macro level. By examining the construction of FTP across different time scales, we suggest that the accumulation of daily experiences and decision-making shapes individuals' lives.

The Relationship Between FTP and Hope

This study examines the relationship between FTP and hope (defined as a positive attitude toward the general future; van Calster et al., 1987). We focus specifically on correlations, as they reflect the iterative nature of development. "Iterative" refers to a process in which the same mechanism is repeated continuously (Bosma & Kunnen, 2001, p. 59). Thus, analyzing correlations is expected to clarify the underlying mechanism. Iteration involves the interaction between an individual and their context (Lichtwarck-Aschoff et al., 2008, p. 382), aligning with the study's aim of exploring this interaction in real-life settings.

FTP theory assumes a moderate positive correlation between FTP and hope, as the theory suggests that FTP is constructed through connections with hope, while it is reduced by connections with fears about the future (Lens et al., 2012). Shirai (1977, p. 216) found a moderate positive correlation between these two variables, indicating that while it is positive in many cases, there are cases where it is negative. For example, with a positive correlation, Herrera (2019, p. 1) describes a teenager who aspires to become a professional and attend university. His hope for the future guides his behavior, but his fears—stemming from his family's financial situation and perceived lack of competence—may prevent him from achieving this goal. Future hopes and fears are deeply influenced by social context (Fonseca et al., 2020). As Trommsdorff (1986, p. 130) notes, "the less a social context supports experiences of success and social acceptance, the more pessimistic one's future orientation tends to be".

In contrast, with a negative correlation, individuals might set goals to change their aversive situations. They consciously and subjectively construct images of the future (Herrera, 2019). The term "consciously" is essential to the process of FTP construction. When individuals

perceive difficulties in their future, they may distance themselves from the present and subjectively "travel" through time (Herrera, 2019, p. 3). In doing so, they may evoke past life experiences that help them better understand their values (Coscioni et al., 2023) and extract lessons for the future (Shirai, 2015). Through this reflective process, they can set new goals and make plans to change their circumstances, resulting in reducing feelings of hopelessness.

Purpose of the Study

This study clarifies how individuals 'consciously' (Herrera, 2019, p. 3) construct their FTP. Specifically, it examines a process of interaction between FTP and hope in real-life conditions by comparing the case of a positive correlation with a case of a negative correlation between these two variables.

Study 1: Case Study Using Long-Term Longitudinal Data

In this study, we investigated the interrelationship between FTP and hope by examining two cases selected from a long-term longitudinal study spanning over 33 years.

Method

Participants

This study utilized data from the Japan Longitudinal Study on Time Perspective and Identity from Adolescence to Adulthood (JaLTI), which has been tracking the same participants since 1992. The study began with an initial sample size of $N = 402$ and continues to this day. It includes 11 cohorts of students enrolled in a national college for teacher training, as well as their graduates. Follow-up data has been collected annually through questionnaires for all participants, with additional interviews conducted at ages 21, 24, 27, 30, 42, and 52 for some participants.

For this analysis, we selected five participants, who completed the survey at all time points, from the first cohort (N = 14). The Pearson correlation coefficients between FTP and hope among them were -.22, .14, .19, .62, and .77. Based on these values, we chose the participant with the most negative correlation (-.22, "B-san") and the participant with the most positive correlation (.77, "A-san"). Correlation coefficients were calculated while controlling for autocorrelation in each time series using the AutoRegressive Integrated Moving Average (ARIMA) model (1,0,0).

Measures

Goal-Directedness and Hope. We used the Experiential Time Perspective Scale (ETPS; Shirai, 1994), a self-report questionnaire that is one among the most widely used time perspective scales in Japan (Shirai, 1996). The ETPS measures FTP using the subscale "goal-directedness," which includes five items such as "I have a general plan for my future life," "I am making preparations for future benefits," and "I do not know what I will be in ten years" (reverse-scored). These items assess aspects of planning, actions, and the temporal extension of FTP, making this subscale suitable for measuring FTP. Hope was measured using four items, including "My future looks bleak" (reverse-scored) and "I am confident in managing my future." Responses were rated on a scale from 1 (disagree) to 5 (agree), and an average score for the items was computed (range: 1-5), with higher scores indicating greater levels of goal-directedness or hope. The reliability and validity of these scales were confirmed during their development (Shirai, 1994, p. 214). Cronbach's alpha for the goal-directedness subscale was .80 for young adults (ages 18-24, N = 1,182) and .83 for middle-aged adults (ages 40-63, N = 575). For the hope subscale, Cronbach's alpha was .69 and .66, respectively. These scales have also been used in cross-cultural studies in Belgium and Japan, yielding satisfactory results (Shirai, 1996, p. 67).

The mean and standard deviation of the measures were calculated for each participant. Participants were classified as "high" if their goal orientation or aspirations were greater than the mean plus half a standard deviation. Conversely, they were classified as "low" if their scores were below the mean minus half a standard deviation. Additionally, the discrepancy between goal-directedness and hope was computed for each participant. The mean and standard deviation of this discrepancy (hope minus goal-directedness) were also calculated. If the absolute value of this discrepancy was greater than the standard deviation, it was considered "large." If the absolute value was less than half of the standard deviation, it was considered "small."

Time Orientation Questionnaire (TOQ) (Shirai et al., 2005)**.** Participants were asked annually to choose the most important time from the past, present and future and to explain why they chose it and not the others.

Annual Brief Self-Report. Participants were asked to provide a brief, open-ended self-report annually, in addition to responding to the questionnaire.

Results

(1) Case with Positive Correlation between Goal-Directedness and Hope: A-san

A-san (Male) showed the most positive correlation between goal-directedness and hope (.77) in the longitudinal study.

As illustrated in Figure 1, there are high levels of both goal-directedness and hope in the 40s and low levels of both in the 20s and 30s. There are also large discrepancies between those two variables (ages 26, 29, 33 and 50) mainly in the 20s and 30s, where goal-directedness is below hope, and small discrepancies (ages 22, 23, 25, 38, 40, 41, 42, 44, 47 and 52) mainly in the 40s.

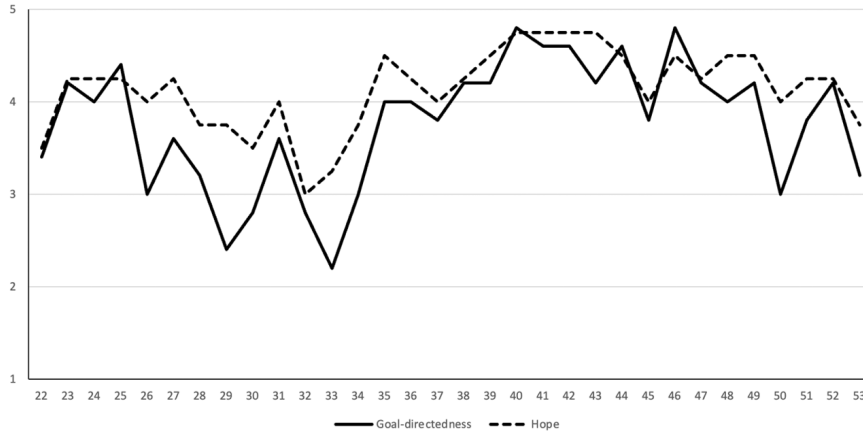

Figure 1. The trajectories of goal-directedness and hope for the case with a positive correlation between these two variables.

Note: The horizontal axis in the figure represents age

Both High Goal-Directedness and Hope (ages 39, 40, 41, 42, 44, 46, and 49). He was deeply invested in activities that were significant for the future. At age 40, he remarked, "Now that I have a child, her future is very important to me … At home, I am always doing housework and playing with her. Whenever I see her smile, my fatigue disappears." His involvement in childcare connected him to the future. He also engaged in future planning with his family, noting at age 44: "All members of the family are discussing building a house."

Both Low Goal-Directedness and Hope (ages 22, 28, 29, 30, 32, 33, 34, and 53). He expressed uncertainty and had ideals but did not make concrete plans. At age 29, he remarked, "I will turn 30 this year. I think it's time to consider marriage, but I'm so busy with work that I can't focus on finding a girlfriend. I don't even know what I want to do in the future." Although he set a goal (marriage) based on his life expectations, he did not take actionable steps toward it. The large discrepancy between his ideal (finding a girlfriend) and his reality (being too busy) created uncertainty (I don't see his future), which diminished

his hope. Additionally, his perception of not taking necessary actions despite knowing he should further reduce his goal-directedness.

During this period, he exhibited low goal-directedness as he engaged in distracting coping strategies to manage depression. At age 33, he noted, "I divorced last year. I'm now accustomed to single life and doing well, as I'm busy playing golf these days." After receiving feedback on his data, he wrote at age 40, "The difference between goal-directedness and hope reflects my optimistic thinking, but it shows a lack of action in my life." This statement explains the lower level of goal-directedness compared to hope, accompanied by his perception of not taking necessary actions despite believing he should. In contrast, at age 42, he remarked, "I enjoy spending time with my family the most, and it seems to have surpassed my hobby of golf," and at age 46, he said, "I send my child to golf lessons. I hope to play golf with her in the future." He connected his hobby with childcare and future aspirations.

As described above, his low levels of both goal-directedness and hope were primarily due to his uncertainty. Specifically, his low goal-directedness was not solely due to a lack of future thinking but rather stemmed from an awareness that he should take the future seriously while failing to plan and take action. In contrast, his high levels of both goal-directedness and hope were observed when he found enjoyment in both the present and future aspects of his family life.

(2) Case with Negative Correlation between Goal-Directedness and Hope: B-san

B-san (Female) showed the most negative correlation between goal-directedness and hope (-.22) in the longitudinal study.

As illustrated in Figure 2, there are high levels of both hope and goal-directedness in the 40s and low levels of both in the 20s and 30s. There are also large discrepancies between them (ages 23, 24, 26, 27, 29, 34, 36, 44, 48 and 52) mainly in the 20s, where goal-directedness is below hope, and small discrepancies (ages 25, 31, 32, 35, 37, 38, 39, 42, 43, 45, 46, and 47) mainly in the 30s and 40s.

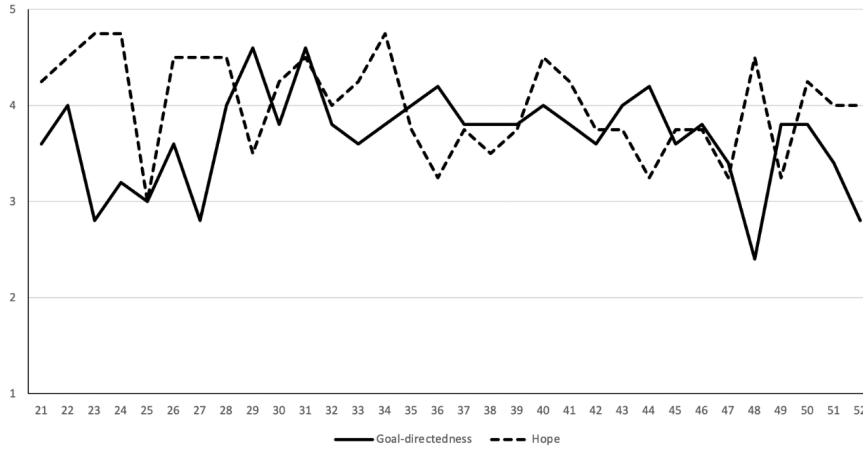

Figure 2. The trajectories of goal-directedness and hope for the case with a negative correlation between these two variables

Note. The horizontal axis in the figure represents age.

High Goal-Directedness, Low Hope (ages 29, 36, and 44). At age 44, she remarked, "I'm a part-time childcare worker, and I'm busy because there aren't enough staff members. I want to continue enjoying my work, so I'm learning skills from my younger colleagues." Despite being overworked, which led to low levels of hope, she maintained a high level of goal-directedness by making meaning in her work, which connects it to her future aspirations.

Low Goal-Directedness, High Hope (ages 23, 24, 27, and 48). At age 48, she remarked, "I have a whole host of smaller things that keep me busy: I am an assistant teacher at a kindergarten, a member of the committee of my daughter's high school parent-teacher association, an auditor at my second son's junior high school, and a consumer affairs officer. I get to know more and more people." Although she was overwhelmed by her busy schedule, which made her situation more stressful and prevented her from pursuing other activities, she focused on the positive aspects of her current situation. This perspective might

enhance her hope, but she did not take steps towards future goals, resulting in low goal-directedness.

Both High Goal-Directedness and Hope (age 31). At age 31, she noted, "Our second child will be born this year. I've started a parenting circle with my friends, and I am having a rewarding and enjoyable time raising children." The impending birth of her child brought positive emotions and thoughts in the present, and she actively involved in preparing for the future with her friends.

Both Low Goal-Directedness and Hope (ages 25 and 47). At age 25, she said, "It's fun in its own way now, but it's hard to imagine this daily routine continuing in a year-long cycle. I know I can't go on like this, but I don't know what to do. I'm uncertain about my future in terms of work and personal life, and the more anxious I become about the present, the more important the future seems." This uncertainty and the discrepancy between her ideal and reality contributed to her feelings of insecurity. It can be explained by Nuttin (1980/1985, p. 65) noting that defining needs in terms of the required relationship with a situation does not necessarily mean that each need immediately directs behavior toward specific goals.

As described above, her hope increased when she enjoyed activities that linked the present with the future and also integrated affect, cognition, and behavior, while hope decreased when current challenges outweighed her efforts. Interestingly, even in difficult situations, if she was able to find positive meaning in her activities, it helped maintain her hope. Her goal-directedness increased when she assigned meaning to activities from a future-oriented perspective, while it decreased when circumstances prevented her from taking action, even though she felt she should.

Study 2: Case Study Using Daily Data

Daily life is marked by constantly changing circumstances, and the ability to set goals and act flexibly in response to these fluctuations is recognized as one of the characteristics of FTP. This study aimed to clarify the interrelationship between goal-directedness and hope through a case study based on daily data. By capturing the day-to-day fluctuations and interactions between these two variables over a period of approximately three weeks, this approach provided a more nuanced understanding of how goal-directedness and hope influence each other over short time spans.

Method

Participants

This study used data from a project titled "A Daily Interplay of Time Perspective and Identity among University Students," which involved 53 undergraduate students enrolled in a national teacher training college. For the analysis presented here, we selected $N = 15$ participants who completed the survey on more than 19 days. Pearson correlation coefficients between goal-directedness and hope were calculated, and 3 participants were excluded due to a lack of variability in hope (i.e., hope remained constant at its highest level in these samples), resulting in no meaningful Pearson correlation values. For the remaining 12 participants, the Pearson correlation coefficients between goal-directedness and hope were: -.52, -.18, -.16, -.10, -.07, -.02, 0, .07, .30, .33, .39, and .48. Based on these results, we selected Participant D-san, with the most negative correlation (-.52), and Participant C-san, with the most positive correlation (.48). In calculating these correlation coefficients, we controlled for autocorrelation in each time series using the AutoRegressive Integrated Moving Average (ARIMA) model (1,0,0).

Procedure

Participants were instructed to log into Moodle (an online platform for creating and sharing educational materials) daily to complete the same questionnaire for an initial period of 10 days, which was later extended to 21 days. The survey periods for the two participants, C-san and D-san, spanned June to July 2021. C-san recorded responses on 20 days, while D-san recorded responses on 19 days. However, the duration from the first to the last response was 38 days for C-san and 29 days for D-san. This was due to gaps between the 10th and 11th survey days, with 17 non-response days for C-san and 7 for D-san. These gaps occurred because the initial request was for 10 days of participation, which was later extended to 21 days. Additionally, C-san had a one-day gap between the 17th and 18th survey days, while D-san had two-day gaps between the 12th and 13th and between the 15th and 16th survey days.

Measures

Goal-Directedness and Hope. Goal-directedness and hope were each assessed using a single item with the highest factor loadings from the factor analysis of the respective subscales in the ETP scale (Shirai, 1994). Goal-directedness was measured by the item, "Today, I had a general plan for the future," while hope was measured by the reverse-coded item, "Today, I feel like I have no future." Participants rated these items on a scale from 1 (disagree) to 5 (agree). Average scores were computed for each item, with higher scores indicating greater levels of goal-directedness or hope.

Daily Brief Self-Report. Each day, participants were also asked to record their "object of commitment" and provide brief descriptions of the "event that influenced changes in commitment or goals" as well as the "event that influenced changes in time perspective" related to that object of commitment.

Reflective Brief Self-Report. After finishing work, participants were also asked to report their reflections.

Results

(1) Case with Positive Correlation Between Goal-Directedness and Hope: C-san

C-san (female, age 21, 3rd-year student) showed the most positive correlation between goal-directedness and hope (.48) in the daily study. She consistently reported the same future goal of becoming "a primary school teacher" each day and also completed a daily report.

As illustrated in Figure 3, the trajectories reveal the tendency of lower levels of both goal directedness and hope or higher levels of both goal directedness and hope.

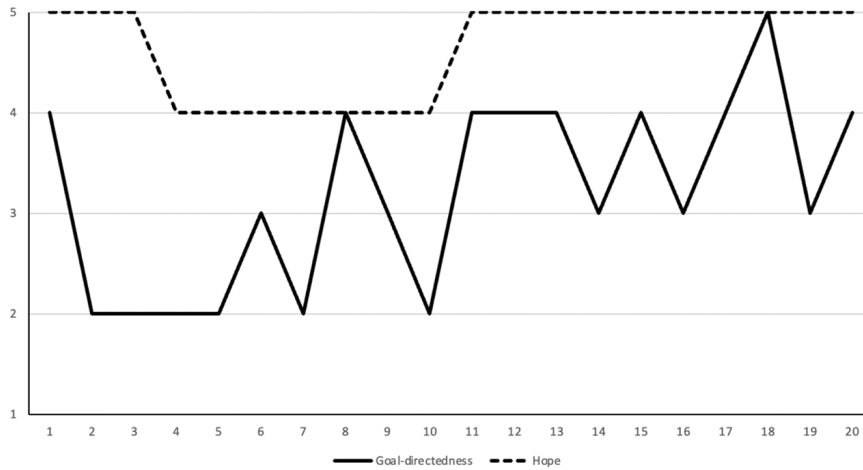

Figure 3. The trajectories of goal-directedness and hope in the case of a positive correlation between these two variables

Note. The horizontal axis represents the number of days.

Both High Goal-Directedness and Hope (days 1, 11, 12, 13, 15, and 18). On day 18, she noted, "I explored information about the teacher employment examination," and on day 13, she stated, "Someone told me I was fit to be a teacher." She actively pursued her

goal of becoming a teacher and received validation from others that she was well-suited for the role. This feedback reinforced her commitment to her goal. As a result, she experienced positive emotions and thoughts while taking actions for her future, which increased both her goal-directedness and hope.

Both Low Goal-Directedness and Hope (days 4, 5, 7, and 10). On day 4, she remarked, "I am still feeling sad after what happened yesterday," and on day 10, she said, "I was too busy to think about what I wanted to achieve in the future." These difficult situations diminished her hope, and her inability to focus on future goals, despite knowing she should, reduced her goal-directedness.

High Goal-Directedness, Low Hope (day 8). On day 8, she noted, "Today, I made a plan for teaching a class. It's a lot of homework every day, but I know these will help me when I become a teacher." While the hard work diminished her hope, she found meaning in connecting her current activities with her future goals, which enhanced her goal-directedness. Her engagement with college assignments was relevant to her goal of becoming a teacher, as the college was specifically for teacher training. This is indicated by her reflections in the survey, where she wrote, "Many students in this college want to become teachers, so I can get a clearer image of my future as a teacher. Taking courses like 'pedagogy' strengthens my awareness of the future."

Low Goal-Directedness, High Hope (day 2). On day 2, she noted, "I have trouble getting up early in the morning and worry that once I become a teacher, there will never be a day when I can get a good night's sleep. Since starting online classes, I've felt stressed and overwhelmed with homework, so I decided to try not to think about them today. Instead, I spent my time doing things I enjoy, like watching dramas and baking sweets." She felt anxious about her suitability for becoming a teacher, but used distraction strategies to relieve her exhaustion from anxiety and assignments for the day. Although she had high hope, she was less goal-oriented because she avoided thinking about the future, despite knowing she should.

As described above, hope was high when she engaged in activities that connected the present with the future, fostering positive emotions and thoughts. Her ability to find meaning in connecting the present with the future increased her goal-directedness, but using distraction strategies to cope with depression reduced it. Although the context of her goal being aligned with the purpose of the college significantly contributed to her goal-directedness and hope, the variation in these two variables depended on her conscious efforts to make meaning and take actions toward the future.

(2) Case with Negative Correlation Between Goal-Directedness and Hope: D-san

D-san (female, age 19, 1st-year student) consistently set the goal of "graduating from college successfully" for her future. This short-term objective may reflect her uncertainty about the future, especially since many participants aimed to "become a teacher," aligning with the college's focus on teacher training. D-san demonstrated the most negative correlation between goal-directedness and hope (-.52) in the daily study, as illustrated in Figure 4.

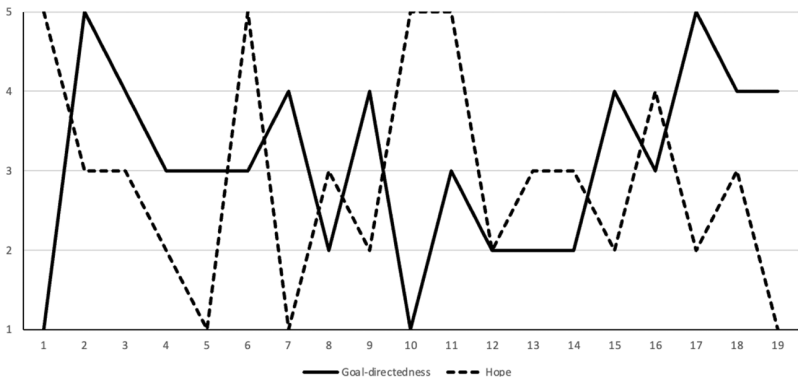

Figure 4. The trajectories of goal-directedness and hope in the case of a negative correlation between these two variables

Note. The horizontal axis represents the number of days.

Her diary contained only two brief entries: On Day 6, she noted, "I talked to friends at college about deadlines and grades," and on Day 8, she wrote, "I upset my girlfriend by being selfish." On other days, she answered "none" when asked about the impact of events.

Reflecting on her survey, she wrote, "I wonder why there is a gap between my ideal and reality; although I have a clear ideal self, my real self does not match my ideal self. During the survey period, I considered my ideal self... and the 20-day survey period became a time for self-reflection, aiming to get a better evaluation of myself."

D-san's responses of "none" for daily events suggest that her reactions were not directly linked to specific events. Her reflections indicate that the negative correlation between goal-directedness and hope may stem from her efforts to balance the states of these two variables. It appears that when D-san felt a lack of hope, she focused on increasing goal-directedness, and conversely, when she felt a lack of goal-directedness, she emphasized hope. This dynamic interplay between goal-directedness and hope likely reflects her conscious effort to reconcile her real self with her ideal self.

General Discussion

Functioning of Goal-Directedness and Hope

The results highlight both the commonalities and differences in the functioning of goal-directedness and hope across yearly and daily contexts. When both goal-directedness and hope are high, individuals engage in rewarding and meaningful activities that connect the present with the future by integrating affect, cognition, and behavioral intention. Particularly, when these activities are shared with family and others, they are more likely to evoke connections between these components. Research shows that sharing time perspectives leads to higher well-being by reflecting social support among members (Salmela-Aro et al., 2010; Shirai & Higata, 2016). Social support helps individuals discover various ways to resolve conflicts, thereby enhancing goal-directedness and hope.

In contrast, hope tends to diminish in states of uncertainty. While aversive events (e.g., divorce) may contribute to reduced hope, the self-created ideal produces the discrepancies with reality. When individuals establish ideals but fail to transform these into actionable goals, they struggle to make plans and take actions, leading to decreased goal-directedness. This occurs the perception of a lack of action when individuals perceive that they are unable to plan or act as needed, which arises consciously (Herrera, 2019) functioning of FTP. Therefore, when hope is low, taking actions toward the future or consciously linking current activities to future goals can increase goal-directedness. However, merely finding positive meaning in the present without connecting it to future plans or actions does not necessarily enhance goal-directedness but may be useful in maintaining hope.

Implications

The concept of functioning "consciously" (Herrera, 2019, p. 3) implies that the process of constructing FTP is observed and created by individuals themselves. In other words, this functioning involves a sense of self, which aligns with the first-person perspective of consciousness (Damasio, 1999). During this process, individuals clarify their tendencies toward self-development (self-regulation) and use their ideal self (self-concept) as a criterion for self-evaluation (Nuttin, 1980/1985). Consequently, individuals create a discrepancy between their ideal and current reality. They then work to change their reality, which leads to self-realization or the construction of personal coherence. This study suggests an importance of consciously constructing FTP that can significantly contribute to self-realization (realizing one's self-concept) in both daily life and long-term development.

Study Strengths, Limitations, and Future Research

The significance of this study lies in its process-oriented approach to FTP. Many studies have inferred within-individual variability from between-individual differences, but this approach encounters the problem of ergodicity. Ergodicity refers to the assumption that group data charac-

teristics remain the same as individual characteristics over time (Kunnen, 2019). This study does not assume ergodicity, as it accounts for significant individual differences in developmental trajectories.

Furthermore, by integrating the strengths of both a long-term longitudinal study and daily data collection, this research makes a significant contribution to the field of psychology, particularly to recent studies that emphasize a comprehensive approach to individual development (e.g., Jansen in de Wal et al., 2024). Crucially, this study is, to the best of the author's knowledge, the first to apply this dual approach to the investigation of time perspective over an extensive life trajectory (33 years), providing unprecedented insights into how FTP evolves across decades. This long-term view offers a deeper understanding of developmental changes that are impossible to capture through shorter or cross-sectional studies, setting a new standard for research in this area.

Case Study Limitations

This study focuses on a limited number of cases, primarily providing observations of specific instances. Detailed information on how these cases were selected and constituted is needed beyond speculative conclusions. Future research could benefit from follow-up interviews and quantitative studies to validate these findings. Additionally, the diary method used in this study included gaps in survey days, with non-consecutive days, which may have impacted the continuity of the data. Future research should aim for a more continuous data collection process.

Incorporating Reflection on the Past

Shirai (2015) proposed that constructing FTP involves reflecting on the past from the present to imagine their future. Recently, reflecting on past experiences was suggested to enhance awareness, values, and self-confidence (Coscioni et al., 2023). The role of past reflection in forming a well-constructed FTP remains an important area for future research. Specifically, examining past experiences may be necessary for individuals seeking alternative goals.

Cross-Cultural Study

Andre et al. (2019) highlighted that FTP plays a significant motivational role across different countries, with varying magnitudes of effects and expressions between Western and Eastern cultures. Shirai proposed a positive present orientation as a type of time orientation specific to Japanese culture (Shirai & Beresneviciene, 2005). Given that time perspective can be culturally specific, it is important to examine whether any cultural biases are reflected in the findings of this study.

Conclusion

This study provides a strong support for the FTP theory proposed by Lens and Peetsma (Lens et al., 2012; Peetsma, 1985; Peetsma et al., 2017), revealing a critical mechanism that links the future with the present through the dynamic interplay of affect, cognition, and behavioral intention. By illustrating how individuals consciously engage with their future, this research uncovers the process by which they identify needs that create discrepancies with their current reality, and transform needs into goals and purposeful actions to change the reality. The act of consciously setting goals, making plans, and taking concrete steps toward achieving them emerges as a powerful pathway to self-realization. Ultimately, this study highlights the profound significance of FTP in shaping meaningful, goal-directed lives, offering important insights into the ways individuals navigate and transform their realities over time.

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