The Relation between Commitment and a Balanced Time Orientation in Adulthood
Shirai, Toshiaki; Kunnen, E. Saskia

Published in:
Identity: An International Journal of Theory and Research

DOI:
10.1080/15283488.2020.1747468

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the “Taverne” license. More information can be found on the University of Groningen website: https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment.

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Download date: 27-10-2023
The Relation between Commitment and a Balanced Time Orientation in Adulthood: Differences between and within Individuals

Toshiaki Shirai & E. Saskia Kunnen

To cite this article: Toshiaki Shirai & E. Saskia Kunnen (2020) The Relation between Commitment and a Balanced Time Orientation in Adulthood: Differences between and within Individuals, Identity, 20:2, 132-142, DOI: 10.1080/15283488.2020.1747468

To link to this article: https://doi.org/10.1080/15283488.2020.1747468
The Relation between Commitment and a Balanced Time Orientation in Adulthood: Differences between and within Individuals

Toshiaki Shirai and E. Saskia Kunnen

ABSTRACT

We studied the relation between time perspective and commitment formation. These concepts are part of a complex dynamic system, in which individual transitional experiences are relevant. Individual development may proceed along different pathways. Based on theory and research we expected that this relation will firstly differ between individuals, and secondly may change within an individual with increasing age during adulthood. We expected stronger within-individual correlations in emerging adulthood than in adulthood because emerging adults have to meet the demands of a transition from school to job places while adult participants in general are either settled in a more stable life pattern with work and their own family or experience idiosyncratic life transitions. For 48 individuals we collected time series of 21 yearly measurements between age 20 and age 40. We found strong differences among these individuals in the within-individual relation between a balanced time perspective and commitment formation. As expected, the relationship in emerging adults was stronger than in later ages. These findings strengthen the notion, based on the concept of non-ergodicity, that if we want to gain knowledge about individual development, we should focus on within-individual longitudinal relations.

KEYWORDS

Time orientation; commitment; developmental processes; ergodicity; longitudinal study

Introduction

In this paper we address the diversity of identity development in adulthood. Identity concerns the awareness of selfsameness and the continuity of one’s own meanings (Erikson, 1959). While adolescence is a critical period for identity crisis, Erikson (1959) proposed that identity formation is a lifelong development. Research has demonstrated that later phases of adulthood have higher levels of thematic coherence in self-defining memories and identity certainty compared with earlier phases of adulthood, as discussed in Kroger (2016), and in the special issue on identity development in adulthood in Identity: International Journal of Theory and Research (2016, Volume 16, Issue 1). However, little is known yet about the diversity in identity development in adulthood. The focus is mostly on the development toward achievement and the variety of pathways of identity development has received less attention (Kunnen & Bosma, 2003). According to meta-analysis of research on identity status change (Kroger et al., 2010), over an average of three years 36% of participants were making some form of progressive identity status change. However, remaining stable in any identity status is still more frequent, at 49% (Kroger, 2016). Also, results from cross-sectional identity status studies between adolescence and midlife indicate a relatively large percentage of individuals who are not identity achieved by age 36. Kroger (2016) observed a steady increase in identity achieved
statuses from 17% at age 18 to 47% by age 36. Kroger (2016) suggested further research on the relationship between identity and context during adulthood, since several pathways of identity movements have been identified through adulthood (Josselson, 1996, 2017). Such a pathway conceptualization could explain the diversity as demonstrated in the studies of Kroger and Josselson. However, we know little about the factors and mechanisms that could explain the different pathways in terms of interindividual differences and the intraintividual stability in the development of identity (Bosma & Kunnen, 2001). Bosma and Kunnen developed a general theoretical model of how continuously interacting contextual and personal factors may result in different developmental trajectories of identity development.

**Pathway approach**

The notion that individuals may follow different pathways is a first step in the realization that individuals differ in important ways and that we need to pay more attention to individual development of identity. There is evidence not only that different individuals may follow different pathways, but that the internal structure of relations among identity concepts may differ between individuals as well. Van der Gaag et al. (2016) demonstrated that the relation between the identity processes exploration and commitment, which both are components of identity, differs between individuals. This suggests that the organization structure of identity and related concepts in general, such as exploration, may differ between individuals. This strengthens the need to focus on longitudinal individual development. The finding of van der Gaag et al. highlights the problem of non-ergodicity that receives increasing attention in the domain of psychology (Fisher et al., 2018). Non-ergodicity means that the relationships between variables that are found in group analysis may differ from the relationships between the same variables when assessed over time within one individual (Molenaar & Ram, 2010).

Thus, if we want to investigate the relation between commitment and related concepts, it is important to focus not only on this relation on the level of a group, but also at the level of the individual with specific attention to differences between individuals.

**Time orientation and commitment**

Future orientation is an essential factor in identity formation in emerging adulthood (Schwartz et al., 2005; Seginer, 2009; T. Shirai et al., 2016). While for adolescence and emerging adulthood (age 18–25, Arnett, 2015) identity development is associated with future orientation, for middle adulthood (after age 40) it is associated with present orientation (Higata & Okamoto, 2008; Higata & Saito, 2007; Shirai, 1997a). Young adulthood (age 26–40), which locates in between emerging adulthood and middle adulthood, seems the period of the shift from future orientation to present orientation but there is no knowledge about the relation between identity and time orientation in exactly this phase of life.

The changes in the relation may depend on a changing developmental context. A life-span perspective shows that a changing developmental context requires flexibility of time orientation (T. Shirai et al., 2017). Shirai et al. called this type of flexible time orientation a balanced time orientation. It refers to a kind of time orientation that is characterized by connecting the present with the future and at the same time being fully in the present. Balance is defined as the mental ability to switch flexibly among time orientations depending on task features, situational considerations, and personal resources rather than be biased toward a specific time perspective that is not adaptive across situations (Zimbardo & Boyd, 1999).

Although a balanced time orientation and identity are mutually influential, a balanced time orientation precedes identity development and sets the stage for processes driving the development of identity (T. Shirai et al., 2012). Thus, a balanced time orientation can arouse openness to change. Bosma and Kunnen (2001) argued that openness to change is related to one’s balance between assimilation and accommodation of commitment. They assumed that an optimal balance offers best conditions for optimal identity development.
However, empirical studies find that a balanced time orientation has significant but low correlations with identity formation (T. Shirai et al., 2012). An explanation for these low correlations may be that all studies so far have focused on groups and group averages. As our starting point is that we should focus on individuals, we assume that to find evidence that a balanced time orientation is more clearly associated with commitment formation in adulthood than in earlier ages, we should study the relation on an intra-individual basis and examine the diversity of relations among individuals. In this way we may also address the question whether and how the relation may change within one individual over time.

Role of context

While the transition phase in emerging adulthood is associated with a future orientation, a more stable life phase in adulthood is associated with a stronger present time orientation. In their lives, younger individuals in general are focused on expectations more than on the present time. While identity formation is a normative process in late adolescents – they form an identity by differentiating themselves from their parents and imagining their futures (Erikson, 1959) – adults reformulate their identities as they respond to new demands and rewards (Marcia, 2002). Marcia (2002) argued that an individual may temporarily regress to an earlier identity mode during unexpected life events in adulthood, such as divorce, falling in love, job loss, and job promotion. Individuals may “feel confused and scattered, behave impulsively, look for support in inappropriate places, or become ‘irresponsible,’ ‘unreliable,’ and ‘unpredictable’” (Marcia, 2002, p. 15). Such feelings may precipitate a crisis, with weakening commitments, and ultimately regression of identity development. Here, the relation with time orientation may be relevant. A crisis triggers future orientation, which motivates exploration and re-creates a commitment. However, this process is not normative since it varies according to the life conditions and experiences by a given individual. As compared to emerging adults, young adults reveal complexity caused by the unexpected character of identity reconstruction and non-linear fluctuations in time orientation. In addition, in young adulthood, we expect longer periods of stability, in which commitments are not at stake. In such a period, we may expect that time orientation can be not clearly associated with commitment formation. Thus, we expect that the normative character and more uniform expectations result in a stronger association between time orientation and commitment formation in late adolescence and emerging adulthood than in young adulthood.

Summarizing, understanding the relation between time orientation and commitment formation seems important in order to understand the mechanisms and pathways of commitment formation in (emerging) adulthood. However, this relationship is not straightforward, but is influenced by differences between people and by differences over time. From a dynamic systems perspective it is assumed that these influences interact in idiosyncratic and non-linear ways, resulting in differences between individuals with regard to the types of trajectories and differences in relations between variables. In this study, a first step is made in clarifying this relationship over time and between individuals.

Hypotheses

**Hypothesis 1.** We expect that the average correlation within individuals is different from the correlation between individuals. This hypothesis is based on the dynamic systems assumption, supported by empirical evidence, that many relations between psychological variables are non-ergodic, as discussed above.

**Hypothesis 2.** Based on our dynamic systems perspective we expect that there will be strong differences in correlations among individuals. This expectation is supported by comparable research of Van der Gaag et al. (2016) that found within-individual correlations between commitment and exploration ranging from strongly negative to strongly positive.
Hypothesis 3. We expect stronger within-individual correlations in emerging adulthood (age 20–24) than in young adulthood (age 25–40) because of the differences in contextual demands. Emerging adults have to meet the normative demands of a transition from school to job places while young adult participants in general are either settled in a more stable life pattern with work and their own family or experience idiosyncratic life transitions.

Method

Participants

This study is part of the Japan Longitudinal Study on Time Perspective and Identity from Adolescence to Adulthood. In this study, data have been annually collected from college students and graduates in Osaka, the second largest city in Japan, including those who come from the urban area surrounding the city. The college students were engaged in teacher training, and therefore many students became primary school teachers after graduation. This study used a cohort-sequential design with 11 cohorts. Four-hundred-two students participated and were followed after their graduation and administered a questionnaire annually by mail. From this large sample, we selected for this study a sub sample of 48 subjects, namely those who had less than 3 missing assessments in the period between age 20 and age 40. Eleven participants were men and 37 were women. The participants belonged to 5 cohorts, who entered the study in the years between 1993 and 2000. There were no significant differences between the earlier three cohorts (N = 23) and the latter two (N = 25) in levels of commitment (t = 0.85, df = 46, n.s.: former M = 4.31, SD = .66; latter M = 4.10, SD = .97) and balanced time orientation (t = 0.73, df = 46, n.s.: former M = 3.78, SD = .53; latter M = 3.67, SD = .53). Also, there were no significant differences between the study dropouts from the longitudinal study (including participants excluded by the researchers because they missed more than two assessments) and the included participants in commitment and balanced time orientation. The only exception concerned commitment at age 35, which was at time 1 higher for the study dropouts than for the continuing participants (t = 2.22, df = 79, p < .05: continuing participants M = 4.01, SD = .99, N = 48; dropouts M = 4.49, SD = .96, N = 33). Dropping out of the study likely occurred because the participants changed their residence after graduation, and did not receive the questionnaires, since the number of dropouts increased with age after graduation until age 30.

Procedure

The questionnaires were administered annually between age 20 and age 40, yielding 21 time points for all participants. No changes were made to instrumentation between time points and cohorts. Participation in the study was voluntary. This study was conducted in compliance with the Osaka Kyoiku University ethics committee approval.

Measures

Identity

The Identity Status Scale (ISS; Kato, 1983) was used to measure commitment, which refers to adherence to a set of convictions, goals, and beliefs (4 items; e.g., “I know who I am and what I wish to do”). The participants responded to each item using a 6-point scale ranging from 1 (Do not agree at all) to 6 (Very strongly agree). Total values for each person were divided by the number of items for each subscale.

This scale was based on Marcia (1966), Nakama et al. (2014), and Niimi et al. (2005) provided validation evidence by showing theoretically expected results. The reliability in this study was computed by Cronbach’s alpha = .71 for age 20 and .85 for age 40.
A balanced time orientation was measured using the Time Orientation Questionnaire (TOQ; Shirai, 1997a, 1997b). Time orientation is defined as a kind of value or belief to consider with respect to importance regarding the past, present, or future (Shirai, 1997a, 1997b) and a balanced time orientation refers to a kind of time orientation whereby individuals have flexibility in integration of the present with the future.

The participants were asked about their preferred time period, and about the reasons for preferring one over the two others. They answered the open question: “Which is the most important time for you, the future, the present, or the past? Please write down why you prefer this and why you do not prefer the others.”

The preferred time period was used to classify their time orientation as future, present, or past. Their degree of time integration was based on their explanation for their preference. It was assessed whether they explicitly distinguished between two types of future and present orientations: positive or negative. Positive future and positive present orientations were each related to the respective time period, indicating the instrumentality of living fully in the present for achieving future goals and hopes. The codes negative future and negative present orientations were used when the participants did not connect their preference to the other time period. A preference for the past was coded as “Past orientation.” Examples of descriptions for each type of time orientation are the following:

(a) Positive future orientation (PFO): “I prefer the future because the present is a step to attain future goals.”
(b) Positive present orientation (PPO): “I am focusing primarily on the present since, if we live fully in the here-and-now, it will lead us to a better future.”
(c) Negative future orientation (NFO): “I prefer the future since my present is unpleasant but my future is unknown.”
(d) Negative present orientation (NPO): “I prefer the present, since I consider only present pleasure, and it is useless to try to see the future.”
(e) Past orientation (PO): “I prefer the past, since my life is based on the memory.”

If the responses did not include explicit references to another time period, we examined whether the descriptions implicitly contained a connection with another time period. For example, a preference for the future with reasons such as “I have set life goals and do my best for pursuing them” might indicate a connection of future goals with the present behavior, and was coded as PFO. Another example of a preference for the present, with the reason that “I want to enjoy now” does not show a connection between the present activity and the extended future, and this was coded as NPO.

Content analysis reliability of the TOQ, measured using the percentage rate of agreement between two independent raters, was 83.3% for age 20 and 86.7% for age 40. Also, Shirai (1997b) reported that the test-retest reliability, measured 2 weeks later in 75 college students, was 80%.

We assigned the score 5 to PFO, 4 to PPO, 3 to NFO, 2 to NPO, and 1 to PO. Our scoring system reflects the assumption that PFO was the highest level, PPO was second, NFO was third, and NPO and PO were the lowest based on the information about this scoring system, see Shirai (1997a, 1997b). The rational for this sequence, was based on the findings of T. Shirai et al. (2012), who showed the important role of a balanced time orientation in revising identity as individuals accommodate a wider range of life experiences during the transition to adulthood.

**Analysis**

We used correlations to test the hypotheses, because methods such as MPlus and multilevel methods assume ergodicity and are thus not fit to test whether non-ergodicity is present. Correlations are a widely used method in analyzing intra-individual relations (Zhang & Wang, 2014). The main problem with the use of correlations in intra-individual time series concerns the dependency
between the measurement points in longitudinal data. Therefore we controlled for the autocorrelation in each time series in the following way: We have no assumptions that cyclical influences exist in our data. Therefore we can expect that the autocorrelation will decrease with increasing time lags. We used AutoRegressive Integrated Moving Average (ARIMA). We started to model each individual sequence with ARIMA model (0,0,0), which means no correction for autocorrelation is included. However, if we did find a significant autocorrelation, we increased the time lag with one step and used ARIMA model (1,0,0), and tested again. If still a significant autocorrelation was found we added a second time lag, ARIMA model (2,0,0), and continued this procedure until no significant autocorrelation was found.

For 28 subjects no autocorrelation was found, 17 subjects showed autocorrelation in one variable, and three subjects in both variables. We prewhitened the time series with a significant autocorrelation. Prewhitening means that the raw time series were replaced by data generated by the ARIMA model that were sufficiently corrected for autocorrelation. For most prewhitened series ARIMA (1,0,0) was used, for a few time series we used ARIMA (2,0,0) or (4,0,0). We used the residuals, thus the scores after eliminating the autocorrelation, instead of the raw data for computing the within-individual correlations.

To test hypothesis 1 we computed the between-individual correlations (Pearson) between commitment and time orientation. Because we have 21 waves we computed the correlation for each wave to control whether the correlation is stable over age. We computed the within-individual correlations with Pearson Correlation per participant over all 21 time points, and computed the average of these within-individual correlations. To test whether the within-individual correlations differ from the between-individual correlations we used a t-test in which we compared the 21 between-individual correlations with the 48 within-individual correlations.

For hypothesis 2 the within-individual correlations and their significance were computed.

To test hypothesis 3 we computed for each individual the within-individual correlation for the emerging adult period, age range 20–24 year, and for the young adult age, range 25–40 year. We computed the difference between the correlation at emerging adulthood and for each participant and used a one sample t-test with 0 as test value to test whether the emerging adult and the young adult correlations differed from each other. We included only those individuals for whom both correlations could be computed (n = 36). For some participants time orientation was completely stable, and for them the correlation could not be computed. The hypothesis is that the strength of the correlation differs between the two age periods. In other words, we expect that time orientation matters more in emerging adulthood. However, we also assume that the direction of the relation may be different for different individuals. In an emerging adult the correlation may be either stronger in a positive direction, or stronger in a negative direction. We therefore performed this comparison on the absolute values of the correlations. Otherwise positive and negative correlations over time would cancel each other.

To explore whether the between-individual outcomes show a similar pattern as the within-individual outcomes we compared the between-individual correlations for the first 5 waves (emerging adulthood) with the 16 correlations for the young adulthood waves by means of a t-test.

Results

In general, the between-individual correlations in all waves are small, and mostly positive. As shown in Table 1 the correlation ranged between −0.07 and 0.27. None of these correlations were significant. The average between-individual correlation was 0.13. No systematic trends over the waves, thus with increasing age, were found.

The average within-individual correlation is −0.09 (Table 2), distributed over a broad range of within-individual correlations (−0.76 to 0.37). Most individuals have negative correlations. Some negative correlations were significant, none of the positive ones were. For four individuals the
Table 1. Between-individual correlation between a balanced time orientation and commitments, for each year of measurement.

<table>
<thead>
<tr>
<th>Age</th>
<th>r</th>
<th>Age</th>
<th>r</th>
<th>Age</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.07</td>
<td>27</td>
<td>0.04</td>
<td>34</td>
<td>0.18</td>
</tr>
<tr>
<td>21</td>
<td>0.24</td>
<td>28</td>
<td>0.02</td>
<td>35</td>
<td>−0.01</td>
</tr>
<tr>
<td>22</td>
<td>0.07</td>
<td>29</td>
<td>0.27</td>
<td>36</td>
<td>0.18</td>
</tr>
<tr>
<td>23</td>
<td>0.12</td>
<td>30</td>
<td>0.27</td>
<td>37</td>
<td>0.05</td>
</tr>
<tr>
<td>24</td>
<td>0.26</td>
<td>31</td>
<td>0.25</td>
<td>38</td>
<td>0.02</td>
</tr>
<tr>
<td>25</td>
<td>0.09</td>
<td>32</td>
<td>0.15</td>
<td>39</td>
<td>0.15</td>
</tr>
<tr>
<td>26</td>
<td>0.27</td>
<td>33</td>
<td>−0.07</td>
<td>40</td>
<td>0.27</td>
</tr>
</tbody>
</table>

Average inter-individual correlation = 0.13.

Table 2. Individual correlations between a balanced time orientation and commitments.

<table>
<thead>
<tr>
<th>Correlations per participant</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>−0.76 ***</td>
<td>−0.32</td>
<td>−0.16</td>
<td>−0.05</td>
<td>0</td>
</tr>
<tr>
<td>−0.62 **</td>
<td>−0.31</td>
<td>−0.13</td>
<td>−0.04</td>
<td>0.02</td>
</tr>
<tr>
<td>−0.55 **</td>
<td>−0.31</td>
<td>−0.11</td>
<td>−0.04</td>
<td>0.02</td>
</tr>
<tr>
<td>−0.42</td>
<td>−0.31</td>
<td>−0.1</td>
<td>−0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>−0.42</td>
<td>−0.23</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>−0.41</td>
<td>−0.21</td>
<td>−0.08</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>−0.37</td>
<td>−0.18</td>
<td>−0.08</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>−0.36</td>
<td>−0.18</td>
<td>−0.06</td>
<td>0</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Average intra-individual correlation = −0.09

* p < .05, ** p < .01, *** p < .001.

correlations could not be computed because their time orientation was completely stable. Per definition, the relation between a variable that is completely stable, and another variable that changes, is nonexistent, thus zero, and therefore we set the correlation for these individuals as 0. The difference between average between- and average within-individual correlations is significant.

Comparing the relation between a balanced time orientation and commitments in emerging adults and young adults we found that the absolute average within-individual correlation in emerging adults, the age between 20 and 24, is higher than in young adults, the age between 25 and 40 (Table 3).

**Discussion**

Hypothesis 1, that the average correlation within individuals is different from the correlation between individuals, could be confirmed. The average correlations within and between individuals were both low, but the intra-individual correlations are negative more often, and the inter-individual correlations are mostly positive. This is a first indication that the process is thus non-ergodic. The second indication for non-ergodicity is that where the between-individual correlations were consistently low at all ages, the correlation within individuals showed a huge variation. Hypothesis 2, that there would be large differences in within-individual correlations could thus be confirmed. We found that the within-individual correlations cover a broad range from high and significant negative to moderate positive correlations, and a large group of individuals demonstrated a weak correlation around zero. Thus, the average within-individual correlation does not represent the individual

Table 3. Absolute between and within-individual correlations between a balanced time orientation and commitments in both age ranges.

<table>
<thead>
<tr>
<th></th>
<th>Age 20-24</th>
<th>Age 25-40</th>
<th>p-value</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td>0.48</td>
<td>0.24</td>
<td>&lt;.00</td>
<td>5.590</td>
<td>35</td>
</tr>
<tr>
<td>Between</td>
<td>0.15</td>
<td>0.13</td>
<td>.29</td>
<td>0.497</td>
<td>7.171</td>
</tr>
</tbody>
</table>
developmental process of a balanced time orientation in relation to commitment formation. This finding strengthens our assumption that to understand the development of commitment in relation to a balanced time orientation, it is important to study the individual longitudinal process.

Hypothesis 3, that the relation between commitment and a balanced time orientation in emerging adulthood would be stronger than in young adulthood, could be confirmed. Also here, the difference is found only when we focus on the within-individual difference between emerging adulthood and adulthood data. The between-individual comparison of both age groups shows no difference between the age groups. This finding supports the assumption that future orientation is essential to identity formation in emerging adults since they set the goals and plans in transition to adulthood. In young adulthood trajectories of identity development become less normative and more idiosyncratic, depending on individual choices and circumstances.

Our findings may have theoretical implications as well. Confirming existing theory and research, the group based correlation is positive. This means that individuals who have a more balanced time orientation tend to have stronger commitments. But the correlation is low and comparison with the other individuals does not yet inform us about the mechanisms inside one individual. At the same time, on the individual level we find a range of correlations including especially high negative correlations. It may mean that especially in times of change, when commitments are challenged and become lower, individuals tend to have a more balanced time orientation. Their time orientation may help them to find new directions and commitments. In times of stability, when commitments are high, a balanced time orientation tends to be lower. The finding that the relations between commitment and balanced time orientation differ between individuals suggests that the developmental process does not work in the same way for different individuals. This fits with the dynamic systems approach to identity development (Bosma & Kunnen, 2001; Kunnen, 2019). Bosma and Kunnen elaborated how continuous interactions between individual and contextual characteristics result in idiosyncratic developmental trajectories.

The question arises what type of different processes may exist and how an individual may change during the process. Individual differences may be an indication of different agentic processes that take place in development. The agency of self-development is essential to identity development (Lillevoll et al., 2013; Schwartz et al., 2005). When individuals experience a crisis such as the loss of a job or relationship this affects the commitment strength (Bosma & Kunnen, 2001). At the same time, it is expected to affect the time orientation. Maybe at first the person strengthens the future orientation by making new and better plans and, if that does not solve the problem, one may change to positive present orientation and enhance openness to reconstruct the commitment. In such a transitional period, the existing relations between variables, in this case between commitment strength and balanced time orientation, is expected to decrease (Kunnen, 2019). Whether or not this happens thus may depend on differences in individual experiences (Van der Gaag et al., 2016) such as (non-normative) challenges that people encounter, and also personal characteristics; for example, the way people react to challenges may be relevant (Bosma & Kunnen, 2001). Another example of interindividual differences depending on small contextual differences, especially in the periods of stability, is that a positive present orientation (which addresses the present by connecting with the future) might be adopted by those who are engaged in everyday parenting but maintain commitments to future goals, such as going back to work when a child is independent. On the other hand, a negative present orientation (which addresses the present as separated from the future) might occur when that same individual is burdened by too many parenting tasks, and therefore loses the commitment to work in the future.

The general assumption in the theories of identity processes (e.g., Bosma & Kunnen, 2001; Grotevant, 1987; Kerpelman et al., 1997; Korobov, 2015) is that identity development is rooted in repeated interactions between person and context. Van der Gaag et al. (2016) demonstrated that these processes result in differences in the structure of developmental trajectories on the micro-level. In the present study, we demonstrated that also on the macro level, in a study covering 21 years, this structure differs between individuals. Moreover, we demonstrated that within individuals, the
structure may change over time. We assume that this may be related to changes in the contextual demands, which change from more normative to more idiosyncratic over development from emerging via young to middle adulthood. Between-individual differences in within-individual correlations may express the adaptability of humans to their specific situation. Individuals create their own lives differently, that is, suitable to their specific set of individual and contextual factors. Factors that are expected to result in different types of pathways are openness to change, environmental support, and developmental history (Bosma & Kunnen, 2001). Therefore, differences in within-individual correlations can clarify how determinants and mechanisms affect identity development in different individuals.

The strength of this study is that it demonstrates the importance of an individual approach in studying the relation between commitment and a balanced time orientation. Theoretically, it was assumed that time orientation is important because it leads to more flexibility in shifting perspective and thereby renders commitment more flexible. However, it was never confirmed so far, because previous studies did not focus on differences between individuals in different periods of age. Another strength in this study is that time orientation was not simply defined as a focus on either past, present or future, but instead the concept of a balanced time orientation was central. The most important strength of this study is that the findings were based on a longitudinal data set that covered a time period of 21 years at much more frequent time intervals (yearly) than those of other longitudinal studies, such as Fadjukoff et al. (2016), Josselson (1996, 2017), and Whitbourne et al. (1992). Therefore, this data set allowed for the examination of within-individual correlations and allowed us to demonstrate non-ergodicity. It provides a foundation for understanding how the person-context system may become increasingly idiosyncratic over time, meaning that individual disruptions in adulthood (divorce, job loss, etc.) become more important in shaping the developmental trajectories.

The weaknesses of the study are first, that the study starts only at age 20. We have only a few data in the period of emerging adulthood. The correlations in emerging adulthood are based on only 5 data points. This does not cause a systematic bias, but it does mean that the correlations in emerging adulthood are less reliable. Also, because of missing data, only a small sample was used for the analysis. Moreover, all individuals come from one city in one country. It seems not plausible that the non-ergodicity is typical for this sample only. However, especially because we found huge differences between individuals, the level of the correlations that we found in this study may be expected to be different in different samples in different cultural and economic conditions. We therefore did not elaborate in detail what the different relations between individuals and age groups may mean from a theoretical perspective. We think that more data are needed to do that.

With this study we have taken only one first small step. Several important questions remain that should be answered before we really understand how the process of commitment development in relation to balanced time orientation works. Also, the cultural context should be examined since there are cultural differences between Japanese and western young adults. Japanese young adults focus on careful consideration of others’ perspectives, resolving conflicts between self and others, and, in some cases, merging themselves into relationships and groups rather than pursuing their own uniqueness (Sugimura, 2020), and also they are likely more present oriented than western young adults (Shirai & Beresneviciene, 2005).

**Conclusion**

This study demonstrates strong differences between individuals in the within-individual relation between a balanced time perspective and commitment formation. This so called non-ergodicity in the interaction between time orientation and commitment development strengthens the notion that if we want to gain knowledge about individual development, we should focus on within-individual longitudinal relations, in addition to between-individual relations. Moreover, the large differences in
within-individual relations suggest that future research should focus on these differences in individuals. A pathway conceptualization of commitment development may be helpful to clarify the diversity in the within-individual correlations and it may help to clarify the determinants and mechanisms of adult identity development. In these specific pathways, we should focus on both personal characteristics, and on the sequence of interactions with the individual context.

**Disclosure statement**

The authors declare that they have no conflict of interest.

**Funding**

This work was supported by MEXT KAKENHI Grant Number JP08610124, JP 10610113 and JSPS KAKENHI Grant Number JP 13610133, JP 20330137, JP 23330202, JP17H02634.

**Ethical Standards**

This study was conducted in compliance with the Osaka Kyoiku University ethics committee approval.

**References**


