Is the future always brighter than the past? Anticipation of changes in the personal future after recall of past experiences

Qi Wang¹, Tracy Gould¹, and Yubo Hou²

¹Department of Human Development, Cornell University, Ithaca, NY, USA
²Department of Psychology, Peking University, Beijing, China

(Received 25 April 2013; accepted 15 December 2013)

People tend to hold an optimistic view of their futures. Using a novel paradigm to examine the anticipated change from the personal past to the personal future, we found that the future was not always perceived as brighter than the past. College students (N = 156) recalled positive and negative personal events of various situations. Following each recall, they imagined a future personal event involving the same situation. Participants expected over half of the events to change in either upward or downward directions, depending on the valence of the past events. In addition, participants anticipated greater changes in domains of less stability, and Asians anticipated greater changes than European Americans. Anticipated future changes were further associated with psychological well-being. The findings shed new light on future event simulation.

Keywords: Memory; Future simulation; Future thinking; Dialecticism; Well-being; Culture.

People tend to hold an optimistic view of their future. When imagining future personal events, people consistently demonstrate a positive bias: they anticipate homogenously ideal futures, generate more quickly positive than negative episodes, and consider positive future events more plausible than negative ones (Newby-Clark & Ross, 2003; Shao, Yao, Ceci, & Wang, 2010; Taylor & Brown, 1988). Such optimism is less apparent when people recall past experiences: they tend to remember evenhandedly “highs” and “lows” from their pasts. In addition, people generally judge their anticipated future events as more pleasurable, more important and more valuable than recalled past events (Caruso, Gilbert, & Wilson, 2008; D’Argembeau & Van der Linden, 2006; Newby-Clark & Ross, 2003). These findings suggest that people perceive their futures as brighter than their pasts. Yet one critically relevant and uncharted question is whether people indeed view their futures as changing to be better than their pasts. The question of how people perceive change in the construction of past and future events is theoretically important in light of recent research of memory-based future event simulation.

Memory and future simulation

According to the constructive-episodic-simulation hypothesis, people use personal memories as the
raw materials to simulate possible future episodes, extracting, recombining and reassembling informational elements from the past into plausible future events (Schacter, 2012). In supporting this view, neuropsychological studies have shown that recollection of past events and imagination of future events engage similar cognitive processes (e.g., imagery, self-referencing, relational processing) and neural substrates (i.e., media prefrontal, temporopolar, hippocampal-parahippocampal and media and lateral parietal regions; Addis, Wong, & Schacter, 2007, 2008). The two forms of mental time travel further exhibit consistent characteristics within a person, such that people who retain more vivid and emotional representations of past events also produce more vivid and emotional representations of future events (D’Argembeau & Van der Linden, 2006; Szpunar, 2010). In addition, the contents of imagined future episodes are typically characterised by familiar personal, contextual and emotional information sampled from memory (Szpunar, 2010).

Memory is not the sole important element in future simulation, however. Semantic knowledge about the world or oneself also plays a critical role in the construction of future events. Such knowledge may modulate the sampling and recombining of relevant memory details, provide a conceptual framework to organise those details, and further supplement a contextual background for interpreting the generated future event (D’Argembeau & Mathy, 2011; Szpunar, 2010). Furthermore, semantic knowledge tends to be readily available and easily accessible and can therefore have immediate effects on the content and structure of anticipated future episodes. Thus, future simulation is not a mechanical process during which details from memory are randomly pieced together; instead, it involves a dynamic, constructive process guided by general knowledge structures. Pertaining to the question of how people perceive change in the construction of past and future events, one form of conceptual knowledge that concerns change in the world and in oneself seems particularly relevant, namely, dialecticism.

Dialecticism and perceived change

Dialecticism as a doctrine or worldview has very ancient origins in both Eastern and Greco-Roman philosophies. It constitutes principles of emergence and development that consider things and phenomena as changing and interdependent of each other. This conceptual system is rooted in three underlying theories: the theory of change, the theory of contradiction and the theory of holism. The theory of change views change as a natural way of life and the world as in constant flux; the theory of contradiction states that two opposing parts can exist simultaneously; and the theory of holism views the world as made up of many interrelated parts. Together, dialectical thinking represents a general understanding that the reality is something that changes and becomes and that combines opposites within itself (Peng & Nisbett, 1999; Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009). Forms of dialectical thinking can be observed in everyday life, such as to view issues from multiple perspectives, to detect contradictory information and postures, to perceive the interconnection among seemingly opposite views and form synthesis, and to engage in analytical reasoning when questions and conflicts arise (Kahle, Liu, Rose, & Kim, 2000; Savina, 2000).

The dialectical view of change, where “one cannot step into the same river twice (Heraclitus, ca. 540–480 B.C.)”, encompasses a temporal dimension. Philosophers like Hegel view human history as unfolding in a dialectical process. Dialectical principles, such as “Fortune depends on misfortune. Misfortune is hidden in fortune (Lao Tsu, ca. 604–531 B.C.)”, further entail a dynamic relationship between the past and the future: A past gain may turn into a future loss and a past disaster may turn into a future blessing. Research has shown that given the influence of dialectical thinking, individuals often predict changes in (both positive and negative) directions for general future happenings such as individual performance, experience of happiness, relationship, income, global economy and even the trend of the stock market (Ji, 2008; Ji, Nisbett, & Su, 2001; Spencer-Rodgers, Williams, & Peng, 2010). Whether this changing view of life influences episodic future simulation is yet to be investigated.

Notably, although dialecticism can be traced back to both ancient Eastern and Western philosophical thoughts and has profoundly influenced the ways of thinking, it is found to be particularly prominent among East Asians. Studies have shown that East Asians exhibit greater tolerance for contradiction, greater tendency to expect
change, and greater cognitive holism than Westerners (Ji, 2008; Ji et al., 2001; Peng & Nisbett, 1999; Spencer-Rodgers et al., 2009, 2010). In contrast, Westerners, particularly European Americans, are more likely than East Asians to seek reconciliation for inconsistencies, perceive things as stable or consistent over time and across situations, and make reasoning and attributions by focusing on individual objects rather than their relations (Peng & Nisbett, 1999; Spencer-Rodgers et al., 2009).

The present study

We address the question of how people perceive change in the construction of past and future personal events in a novel paradigm: participants first recalled a positive or negative personal event of a particular situation. They then imagined a future personal event involving the same situation. The shift of affective valence in the future event was then observed. We predicted that, given the prevailing influence of dialecticism, a considerable percentage of participants would anticipate changes from the past to the future in either upward or downward directions, depending on the valence of their past experiences. Furthermore, we included participants from Asian and European American cultural backgrounds. Given the greater endorsement of dialecticism in Asian cultures (Peng & Nisbett, 1999; Spencer-Rodgers et al., 2009), we expected Asians to perceive greater changes from past to future personal events than European Americans.

Another goal of the present study is to examine the perceived change from the past to the future across different life domains that vary in stability, namely, academic performance, peer relations and family. Academic performance is often accompanied by uncertainty and fluctuation (Li, 2012); peer relations tend to be more voluntary and mobile than family relationships, which are more stable and less conditional (Schug, Yuki, & Maddux, 2010). Dialectical thinking may therefore be more prominent in the academic and peer domains than the family domain and, consequently, participants would anticipate greater changes in the former two domains.

Finally, we explore the consequences of perceived future changes for psychological well-being. The anticipation of positive future personal experiences has been linked to psychological well-being (Taylor & Brown, 1988). How the anticipation of future changes influences well-being remains an empirical question. Conceivably, it may be adaptive for individuals to view their personal future as fluid and likely different from what has happened in the past, so that they may stay optimistic when facing obstacles and be prepared when things are going strong. Perceived future changes may therefore be associated with greater psychological well-being, regardless of the direction of change. Alternatively, the anticipation of upward changes may reflect optimism in life more generally and thus greater well-being, whereas the anticipation of downward changes may signal pessimism and thus less well-being. Given the lack of prior data, we made no a priori predictions about the relation of perceived future changes to psychological well-being.

METHOD

Participants

Fifty-seven Asian (49 females; mean age = 20.21 years; range = 17.92–23.83 years) and 99 Euro-American undergraduate students (61 females; mean age = 20.41 years, range = 18.17–24.12 years) at Cornell University participated in the study for partial course credit or $5. Among the Asians, 29 were Chinese, 16 were Koreans, 6 did not provide specific information and 6 were of other East- and South-Asian cultural backgrounds.1 They had on average lived in the USA since age 4.55 years.

Procedure

Participants were tested in small groups of 1–5. They completed a survey that included questions about past and future events and a well-being measure, which took approximately 30 minutes.2

---

1 The data from an additional participant who had one parent of Asian and one of European descent were excluded.

2 Participants completed additional questionnaires that address separate research questions. The data are not included here.
Measures

Past and future events. Participants were asked to each recall three positive and three negative recent personal events, presented in a random order, in three domains. In the academic domain, participants were asked to recall a recent time “when you did well on an assignment at school” and “when you had a difficult test at school and got a bad grade”. In the peer domain, participants were asked to recall a recent time “when you and someone had great fun together” and “when you and someone got into an argument”. In the family domain, participants were asked to recall “a recent family gathering” and “a recent family dispute”. After each recall, they were asked to imagine a future episode involving the same situation as in the past event (e.g., taking another difficult exam, hanging out with the same peer). Participants provided a detailed description for each past and future event.

Each anticipated future event was coded for overall valence as positive, negative or neutral. This was determined by the general affective tone of the event (e.g., celebration of a job well done; having a fight), in reference to the use of positive and negative words in the event description (Marian & Kaushanskaya, 2004, 2008). Note that “neutral” included events that were of no obvious valence (e.g., taking an examine in a new building) and events that were equally positive and negative (e.g., doing well in a future test, but making some unnecessary mistakes). Two coders, both unaware of the study’s hypotheses, independently coded 20% of the data for reliability estimate and had a 97.6% agreement. One coder then coded the rest of the data.

Well-being. Participants completed the Flourishing Scale developed by Diener and colleagues (2010). The scale consists of eight items to assess self-perceived success in areas such as relationships, self-esteem, purpose and optimism (e.g., “I lead a purposeful and meaningful life”). Participants were asked to indicate on a 7-point scale (1 = strongly disagree; 7 = strongly agree) their agreement with each statement. Their responses were aggregated to form a single well-being score to represent psychological resources and strengths. One item (#3: I am engaged and interested in my daily activities) had a low correlation with other items, and the Cronbach’s alpha increased from 0.56 to 0.84 after the item was excluded. The final flourishing score therefore excluded this item, with a possible range of 0–49.

RESULTS

The valence of participants’ memories was first examined for a manipulation check. A few participants failed to follow the instruction (N = 3 per memory question): they recalled positive memories in response to the request for a negative memory, or recalled negative memories in response to the request for a positive memory. They were excluded from analyses.

In the following sections, we examined both the likelihood and the magnitude of anticipated valence change from the past to the future and the effects of culture and domain. This was followed by results pertaining to the relation of valence change to well-being. The likelihood of valence change was tested based on any downward change in the future (negative or neutral) after recalling a positive memory, and any upward change in the future (positive or neutral) after recalling a negative memory. The magnitude of the anticipated change was quantified, whereby following a positive past event, a positive, neutral or negative future event was scored 0, 1 or 2, respectively; and following a negative past event, a positive, neutral or negative future event was scored 2, 1 or 0, respectively.

Anticipating future change

Analyses were performed on the likelihood and magnitude of valence change from past to future events across and within domains (see Table 1). Note because each participant responded to six

<table>
<thead>
<tr>
<th>Domain</th>
<th>Past event</th>
<th>Likelihood</th>
<th>Magnitude</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>Positive</td>
<td>0.63</td>
<td>0.80</td>
<td>0.70</td>
</tr>
<tr>
<td>Peer</td>
<td>Positive</td>
<td>0.61</td>
<td>0.62</td>
<td>0.51</td>
</tr>
<tr>
<td>Peer</td>
<td>Negative</td>
<td>0.84</td>
<td>1.05</td>
<td>0.60</td>
</tr>
<tr>
<td>Family</td>
<td>Positive</td>
<td>0.62</td>
<td>0.65</td>
<td>0.55</td>
</tr>
<tr>
<td>Family</td>
<td>Negative</td>
<td>0.21</td>
<td>0.25</td>
<td>0.50</td>
</tr>
<tr>
<td>Total</td>
<td>Positive</td>
<td>0.62</td>
<td>0.69</td>
<td>0.38</td>
</tr>
<tr>
<td>Total</td>
<td>Negative</td>
<td>0.51</td>
<td>0.64</td>
<td>0.41</td>
</tr>
<tr>
<td>All</td>
<td>0.56</td>
<td>0.67</td>
<td>0.66</td>
<td></td>
</tr>
</tbody>
</table>
past–future event pairings, analyses of the likelihood ratio across multiple pairings (i.e., when comparing upward and downward changes within and across domains) would involve repeated measures categorical data (i.e., change vs. no change). We conducted generalised linear mixed model (GLMM) analyses using the SAS PROC GLIMMIX program, with valence of past event as a fixed within-subject factor and subject as a random factor. The GLIMMIX procedure estimates the parameters by applying pseudo-likelihood techniques and produces $F$ statistics in the output (Littell, Milliken, Stroup, Wolfinger, & Schabenberger, 2006; Wolfinger & O’Connell, 1993). Within an event pairing (e.g., when testing how likely changes were expected to happen following a past success), we performed logistic regression analyses. For analyses of magnitude, repeated measures analyses were conducted. Some participants did not provide all events, so the degrees of freedom varied slightly across tests.

Across all domains of events, 56% of the events were anticipated to change in valence from the past to the future. A GLMM analysis showed that participants were more likely to anticipate downward changes in the future following positive past events (62%) than to anticipate upward changes in the future following negative past events (51%), $F(1, 154) = 10.70, p = .001, 95\% \text{ CI: } -0.74, -0.18$. The average magnitudes of upward and downward changes did not differ significantly.

In the academic domain, 63% participants anticipated change in direction in the future after recalling a past success, $\chi^2(1, N = 153) = 10.71, p = .001, \phi = .26$. However, participants were equally likely to anticipate future change (46%) and no change (54%) after recalling a past failure. A GLMM analysis showed that participants were more likely to anticipate downward changes (63%) following past successes than upward changes following past failures (46%), $F(1, 151) = 8.83, p = .003, 95\% \text{ CI: } -0.15, -0.23$. The magnitude of downward changes was slightly larger than that of upward changes, $F(1, 151) = 3.51, p = .06, \eta^2_p = .023$.

In the peer domain, participants were more likely to anticipate future change following both positive peer experiences (61%), $\chi^2(1, N = 153) = 7.00, p = .008, \phi = .21$, and negative peer experiences (84%), $\chi^2(1, N = 153) = 57.23, p < .0001, \phi = .61$. A GLMM analysis showed that upward changes (84%) were expected to be more likely to take place than downward changes (61%), $F(1, 150) = 20.43, p < .0001, 95\% \text{ CI: } 0.71, 1.81$. Upward changes also showed greater magnitude than downward changes in this domain, $F(1, 150) = 43.81, p < .0001, \eta^2_p = .23$.

In the family domain, participants were more likely to anticipate future change following a positive family event (62%), $\chi^2(1, N = 139) = 7.68, p = .006, \phi = .24$, whereas they expected things less likely to change following a negative family event (21%), $\chi^2(1, N = 151) = 43.50, p < .0001, \phi = .54$. A GLMM analysis showed that participants were more likely to anticipate downward changes (62%) than upward changes (21%) in this domain, $F(1, 135) = 46.06, p < .0001, 95\% \text{ CI: } -2.32, -1.27$. The magnitude of anticipated downward changes was also larger than that of upward changes, $F(1, 135) = 36.85, p < .0001, \eta^2_p = .21$.

### Effects of Culture

Next, culture effects on the likelihood and magnitude of valence change were tested for each past–future event pairing. Logistic regression analyses were conducted for likelihood ratios and ANOVAs for magnitudes, with culture as the independent variable. Compared with European Americans, Asians were more likely to anticipate changes (see Figure 1 for likelihood ratios) and anticipated greater changes in their futures after recalling a past academic success ($Ms_{Asian} = .96$ vs. 70, $SDs = 0.74$ vs. 66), $\chi^2(1, N = 153) = 2.50, p = .11, \phi = .13, F(1, 151) = 5.14, p = .03, \eta^2_p = .033$, and a past family dispute ($Ms_{Asian} = .34$ vs.19, $SDs = .55$ vs.47), $\chi^2(1, N = 151) = 4.36, p = .04, \phi = .17, F(1, 149) = 3.17, p = .08, \eta^2_p = .021$.

### Effects of Domain

To examine the influence of domain, analyses were conducted on the likelihood and magnitude of valence change between domains. GLMM analyses with domain as a fixed within-subject factor and subject as a random factor were conducted for likelihood ratios. Repeated measures analyses were conducted for magnitudes.

After recalling negative memories, participants were most likely to anticipate change to a brighter future in the peer domain, followed by the academic domain and lastly the family domain (see Figure 1), $Fs(1, 148) > 21.34, ps < .0001$. Similarly, participants anticipated the greatest
upward changes in the peer domain, followed by the academic domain and lastly the family domain (see Table 1), $F(1, 150) = 33.11, p < .0001, \eta^2_p > .18$. There was no domain effect after recalling positive memories.

**Relation to well-being**

Pertaining to well-being, European Americans ($M = 40.98, SD = 5.42$) scored higher than Asians ($M = 38.38, SD = 5.23$).
(M = 38.56, SD = 5.91) on the Flourishing Scale, F
(1, 154) = 6.73, \( p = .01 \), \( \eta_p^2 = .04 \). Regression
analyses were conducted to test the relation of the
anticipated future change to the flourish score,
independent of culture. In the first regression
model, culture and the average magnitude of
downward changes were included as predictors
and the flourishing score as the dependent vari-
able. A marginally significant effect of downward
change was found independent of culture, \( \beta = -1.99 \), \( t = -1.84 \), \( p = .07 \). Participants who
anticipated greater downward changes in the
future had lower flourishing scores, regardless of
culture. In the second regression model, culture
and the average magnitude of upward changes
were included as predictors and the flourishing
score as the dependent variable. There was a
significant positive effect of upward change on
the flourishing score, \( \beta = 1.98 \), \( t = 2.03 \), \( p = .04 \).
Participants who anticipated greater upward
changes in the future had higher flourishing
scores, regardless of culture. Including the inter-
action between culture and upward or downward
changes in the models showed no significant
interaction.

**DISCUSSION**

The present study used a novel paradigm to
examine how people perceive change from the
personal past to the personal future in episodic
future simulation. When asked to imagine future
personal episodes following recall of relevant past
events, participants expected over half of the events
to change in either upward or downward directions,
depending on the affective nature of the past
events. Also, they were more likely to anticipate
future change in direction in four out of the six
past–future event pairings. Overall, participants
were more likely to anticipate downward changes
than upward changes from the past to the future. It
appears that although people tend to be generally
optimistic about their future when remembering
and imagining personal events in parallel (D’Ar-
geombeau & Van der Linden, 2006; Newby-Clark &
Ross, 2003; Shao et al., 2010), they may perceive
positive or negative changes in the personal future
by taking into consideration of what happened in
the past. The future is therefore not always brighter
than the past.

The anticipated change in the representation of
the personal future may reflect the pervasive
influence of dialectical thinking that views life as
an evolving, fluctuant and transient process (Peng
& Nisbett, 1999): Things often get better or worse
rather than remaining the same. Currently, there is
a considerable interest in the role of memory in
providing the raw materials for future event
simulation (Schacter, 2012). Important from the
present perspective, in addition to memory
information, semantic knowledge may provide a
framework for the selection, integration and inter-
pretation of memory details in the construction of
future events (D’Argembeau & Mathy, 2011;
Szpunar, 2010). Dialecticism as a general under-
standing of the reality as something changing and
becoming may orient people to perceive changes
when constructing future personal events based on
past experiences.

In line with this view, given their greater
endorsement of dialecticism and greater tendency
to expect change than Westerners (Ji, 2008; Ji
et al., 2001; Spencer-Rodgers et al., 2009, 2010),
Asian participants perceived greater future
changes following two of the six past events than
did European Americans. Compared with Euro-
pean Americans, Asians anticipated greater down-
ward changes after recalling a past family dispute; this
more modest view of future academic performance
may reflect the motivation for con-

uous self-improvement in this domain as highly
valued in Asian cultures (Heine & Hamamura,
2007). Asians also anticipated greater upward
changes after recalling a past family dispute; this
more optimistic view of family relations may
reflect the great emphasis on family interdepend-
These findings suggest the importance of self-goals
and motivation, saturated in culture, in shaping
personal event construction (Conway & Pleydell-

As predicted, participants anticipated greater
changes in domains often characterised as tenuous
or unstable, namely, peer relations and academic
performance, than the domain of greater stability,
namely, family (Li, 2012; Schug et al., 2010). It
appears that general knowledge of the world, as in
the current case of dialecticism, may be shaped by
the psychosocial characteristics of specific life
domains, which then results in nuanced influences
on future thinking in these domains. Interestingly,
given that peer relations are a prioritised self-goal
of young adults (Unemori, Omorogi, & Markus,
2004), participants seemed particularly moti-
vated to anticipate a brighter personal future in
this domain, where they expected more and
greater upward changes than downward changes.
In contrast, in the academic and family domains, participants expected more and greater downward changes than upward changes, which might reflect college students’ anxiety over academic performance and family relations. Future research that closely examines the characteristics of important life domains and related self-goals in affecting future simulation will be fruitful.

Finally, anticipated changes in future personal events were associated with psychological well-being. Regardless of culture, participants who anticipated greater downward changes in the future exhibited less well-being, and those who anticipated greater upward changes in the future exhibited greater well-being, as assessed with the Flourishing Scale (Diener et al., 2010). These findings are consistent with the literature showing that a negative outlook towards the future diminishes well-being, whereas a positive one facilitates well-being (Taylor & Brown, 1988). For instance, Pyszczynski, Greenberg, and Holt (1987) found that depressed patients were more likely than normal controls to imagine negative events happening in the future and this, in turn, made them vulnerable to becoming more depressed. Pertaining to anticipated future changes, it may be wise for individuals to think about possible future fortunes after a mishap, and not to worry about whether their blessings may turn sour. Notably, European Americans scored higher on psychological well-being than Asians, consistent with previous findings (e.g., Diener, Diener, & Diener, 1995; Kitayama, Markus, & Kurokawa, 2000; Ross, Xun, & Wilson, 2002). One proposed interpretation of such cultural differences is that Asians, with a greater endorsement of dialecticism, tend to view opposing qualities, such as happiness and sadness, as coexisting within themselves and, as a result, give more ambivalent or both-valenced well-being ratings than their Western counterparts (Spencer-Rodgers, Peng, Wang, & Hou, 2004). Psychological well-being should thus be understood in specific cultural contexts, in relation to general cultural beliefs and ideologies.

Taken together, using a novel paradigm, the present study yielded some preliminary and yet provocative findings. Additional methodological improvements will be helpful in future research, such as to ask participants to rate the affective quality of their memories and future events and to use finer rating scales to capture the magnitude of valence change. It is our hope that the study will inspire further investigations to examine factors that influence episodic future thinking and the implications for well-being.

REFERENCES


