Oh Darling, This Too Shall Pass: Cyclic Perceptions of Change Keep You in Romantic Relationships Longer During Difficult Times

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Abstract

The present research explored how individual differences in perceptions of change (cyclic vs. linear) influence relational decisions. Three studies examined whether cyclic perceptions of change, a central feature of holistic thinking, keep people in romantic relationships longer due to the belief that hardships *too shall pass*. Study 1 found that cyclic perceivers reported greater endurance against relational transgressions than linear perceivers. In Studies 2a and 2b, cyclic perceivers reported fewer breakups in romantic relationships (Study 2a) and showed less willingness to break up (Study 2b) than linear perceivers due to their stronger relational endurance. Through a longitudinal examination, Study 3 evidenced that cyclic perceivers were more likely to remain in romantic relationships than linear perceivers over 1 year. The current studies provide new insight into how individual differences in perceptions of change contribute to decision-making in romantic relationships.

Keywords

analytic-holistic thinking, perceptions of change, culture, romantic relationships, relationship dissolution

Breaking up with a romantic partner is one of the most distressing life events one can endure (Holmes & Rahe, 1967; Rhoades, Kamp Dush, Atkins, Stanley, & Markman, 2011; Sbarra & Emery, 2005). When faced with relational difficulties, some people attempt to salvage their relationships, while others choose to begin a new life without them. Decisions of whether to terminate a relationship hinge on multiple intrapersonal factors including personality traits (e.g., agreeableness), attachment dimension (e.g., avoidant and anxious attachment), destiny beliefs, and self-esteem (see Le, Dove, Agnew, Korn, & Mutso, 2010, for a review). The present study poses a novel question as to how one's change belief contributes to deciding whether to terminate a relationship. Specifically, we explored a possibility that *cyclic perceivers* (i.e., who believe that

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if something goes down, it will eventually go up, and vice versa) are more reluctant to end their relationships than *linear perceivers* (i.e., who believe that if something goes down, it will continue to go down, and vice versa), as the former is more tolerant to relational hardships than the latter.

Analytic Versus Holistic Thinking Style: Perception of Change (PC)

A framework that guides our hypothesis is the two different cognitive styles labeled as analytic and holistic thinking. Largely based on cross-cultural examinations between East Asians and European North Americans, Nisbett, Peng, Choi, and Norenzayan (2001) posited the analytic-holistic reasoning model that people's thinking styles vary in the degree to which they are oriented toward interconnections in the universe. Analytic thinkers (predominantly European North Americans) generally view the universe as being composed of independent objects, whereas holistic thinkers (predominantly East Asians) hold an assumption that elements are interconnected with one another (e.g., Munro, 1985; Nakamura, 1964/1985; Needham, 1962). Therefore, analytic thinkers tend to focus on objects in separation from other entities and contexts, whereas holistic thinkers tend to focus more on relatedness among different objects and see objects in relation to their context (Choi, Koo, & Choi, 2007). A plethora of evidence has demonstrated differences in analytic-holistic reasoning in various cognitive domains, such as attention (Ji, Peng, & Nisbett, 2000; Kitayama, Duffy, Kawamura, & Larsen, 2003), categorization (Chiu, 1972; Norenzayan, Choi, & Nisbett, 2002), memory (Schwartz, Boduroglu, & Gutchess, 2014), causality (Choi, Dalal, Kim-Prieto, & Park, 2003; Choi, Nisbett, & Norenzayan, 1999), and conflict resolution (Peng & Nisbett, 1999).

Of particular relevance to the present research is PC, which refers to the belief that the world changes in a linear (*analytic*) or cyclic (*holistic*) manner (Ji, Nisbett, & Su, 2001; Koo & Choi, 2005). As implicated by analytic-holistic thinking, linear perceivers tend to pay more attention to focal events (e.g., good things happened) and expect a continuation of similar events (e.g., good things will keep happening), whereas cyclic perceivers are inclined to think beyond focal events and consider a possibility of contradictory events (e.g., bad things may follow). For instance, in their cross-cultural examination, Ji, Zhang, and Guo (2008) found that linear perceivers (European Canadians) were willing to buy rising stocks due to their expectations that stocks will keep rising, whereas cyclic perceivers (Chinese) were willing to buy declining stocks based on their beliefs that stocks will turn to rise. Similarly, other studies found that cyclic perceivers are more prone to believing that the poor can become rich, adversaries can become lovers, and a dying economy can recover (Ji, Nisbett, & Su, 2001; Ji, Zhang, & Guo, 2008). These findings suggest that compared with linear perceivers, cyclic perceivers are more likely to think "this too shall pass" when confronting hardships in romantic relationships.

PC and Relational Outcomes

Thinking positively about one's own relationship promotes relationship quality (Murray, Holmes, & Griffin, 1996). For example, cognitive dispositions such as optimism motivate individuals to fare better in relationships (Carver, Scheier, & Segerstrom, 2010; Murray & Holmes, 1997; Srivastava, McGonigal, Richards, Butler, & Gross, 2006). Particularly, optimism raises peoples' hopes for the best outcome, which helps people confer resilience to stressful events (see Solberg Nes & Segerstrom, 2006, for review). Srivastava et al. (2006) found that optimists perceive greater support from their partners and are more willing to work through problems, thereby feeling more satisfied with their relationships.

In addition, some lay theories about changeability of traits also play a role in relationships (Fletcher & Thomas, 1996; Franiuk, Cohen, & Pomerantz, 2002; Knee, 1998). Specifically, compared with the belief that relationship qualities are fixed (*entity theory*), believing that relationships can grow (*incremental theory*) enhances hopes in overcoming challenges (Knee, Patrick, & Lonsbary, 2003), increases appreciation of a partner's self-improvement effort (Hui, Bond, & Molden, 2012), and lowers perpetration of violence (Cobb, DeWall, Lambert, & Fincham, 2013). As a result, incremental theorists are oriented toward actively engaging in remedial actions to overcome relational challenges (Hong, Chiu, Dweck, Lin, & Wan, 1999).

Likewise, we propose that cyclic change beliefs would also play a role in relationships, particularly in individuals' decisions to terminate relationships. While some cognitive dispositions, such as optimism and incremental lay belief, promote active relational maintenance behaviors by shedding a positive light on the relationships, the cyclic PC helps prevent individuals from breaking up through the worldview that the current situations are subject to change. That is, cyclic perceivers tend to expect changeability of situations and also believe that there are ups and downs in relationships. For example, when their relationships are at stake, cyclic perceivers would be willing to hold the decision to terminate their relationships as they believe things shall change. In contrast, linear perceivers are prone to believe in continuation of downturns and may well decide to end their troubling relationships in the moment. Therefore, cyclic perceivers would be reluctant to terminate relationships not necessarily because they foresee a bright future in their relationships, but because they would rather tolerate the current situations by discrediting a possibility that this hard time will continue. Based on this rationale, the present study tested the contributing role of cyclic PC in relationship longevity across three studies. In the last study, we also measured general optimism to show that cyclic PC is conducive to relationship longevity beyond an optimistic view.

PC in Bad Times (vs. Good Times)

As noted above, our primary prediction is that cyclic and linear perceivers would react differently when confronting relational hardships. During relationally difficult times, linear perceivers would expect that relational problems would continue to happen, thus discouraging them from remaining in the relationships. Cyclic perceivers, however, would assume that their problems shall be reversed and forecast good times to come. As a result, this cyclic belief would prevent them from breaking up with their partner.

It is important to note that the basic logic of cyclic PC is that good times will come after adversity, and bad times will come after prosperity. Thus, one could reasonably argue that cyclic perceivers would not only maintain relationships during hardships, but also terminate healthy relationships quickly. While this argument is theoretically plausible, we are reluctant to make a priori prediction about good times for two reasons. First, a body of relationship literature demonstrated that a motive to think negatively about satisfying relationships is rare. Rather, individuals in satisfied relationships are more motivated to maintain their relationship by idealizing their partner and derogating potential alternatives than those in unhappy relationships (Johnson & Rusbult, 1989; Murray et al., 1996). This positive illusion toward a relational partner among happy couples is so robust that the same pattern has also been found even in the East Asian culture (Endo, Heine, & Lehman, 2000), where PC is robust yet such an enhancement motive is reportedly sparse (Heine, Lehman, Markus, & Kitayama, 1999). After all, happy couples are unlikely to enter a stage of worrying about negative things during good times, and this may be no exception to cyclic perceivers in satisfying relationships. When things go bad, however, people start to ponder about why they are in the current unsatisfying relationship and weigh the pros and cons of their partner in comparison to potential alternatives (Drigotas & Rusbult, 1992). Likewise, we suggest that people, including cyclic perceivers, would only start to make predictions on

whether their relationship will get better or worse and decide to remain or withdraw when things go bad.

Second, there is a possibility that PC may actually serve as a "buffer" even during good times. PC originates from individuals' system of thoughts (analytic-holistic thinking style) that is a trait-like thinking style rather than a motivated cognition (Nisbett et al., 2001). Given that PC is a stable thinking style, cyclic perceivers in satisfying relationships may think that this satisfaction would fleet and their relationship may sink. This forecast of a hard time may promote cyclic perceivers' relationship maintenance by preparing them for relational challenges. Moreover, cyclic perceivers tend not to get too elevated during good times and dejected during bad times as everything is subject to change (Choi & Nisbett, 2000; Ji, Nisbett, & Su, 2001). Therefore, instead of getting too excited and expecting an eternal good time, they would become more cautious about an upcoming bad time. Meanwhile, linear thinkers who would have assumed continuation of a good time may feel despondent by the unexpected hardship, thus, more easily giving up on their relationship. For the above two reasons, we leave it as an open question whether cyclic perceivers would be less or more willing to remain in relationships during good times. The present study mainly investigated the effect of cyclic PC on relationship longevity during hard times (Studies 1-2b). However, Study 3 preliminarily analyzed the association between PC and relationship longevity during both good times and bad times (i.e., satisfying and unsatisfying relationships).

Present Research

If an individual construes an immediate relational problem to be subject to change and predicts the relationship will eventually flourish again, one may be less likely to terminate it. Across three studies, we attempted to test our hypothesis that cyclic PC would keep people in romantic relationships longer by promoting endurance in the face of relational hardships. Study 1 examined whether cyclic PC was associated with greater endurance against hypothetical transgressions in relationships. In Studies 2a and 2b, we further investigated whether cyclic perceivers' greater endurance during relational hardships predicts fewer breakups (Study 2a) and less willingness to break up from relational problems (Study 2b). Last, Study 3 examined whether PC predicts relationship dissolution using a year-long, two-wave longitudinal design.

Study 1

In Study 1, participants were placed in a hypothetical interpersonal situation where they decided either to remain in or withdraw from unsatisfying romantic relationships. We predicted that cyclic perceivers would show greater willingness to remain than linear perceivers. We also attempted to rule out an alternative account that cultural orientation (i.e., individualism-collectivism), not PC, is the actual predictor of one's willingness to maintain relationships. People oriented toward collectivistic goals pursue social harmony and others' well-being and, thus, may avoid terminating their romantic relationships. In contrast, people oriented toward individualistic goals uphold values of autonomy and freedom and, therefore, may not tolerate relational hardships at the cost of their own well-being (Hui & Triandis, 1986; Triandis, 1995). To address this alternative possibility, we included individualism and collectivism scores and examined whether PC still predicted participants' willingness to remain in a dysfunctional relationship while controlling for individualism-collectivism.

Method

Participants. In total, 113 undergraduate students at a public university in Korea participated in this study to earn partial course credit for their participation (51 women, 62 men, $M_{age} = 20.94$

years, *SD* = 2.32). The sample size in Study 1 was not determined a priori, and we recruited as many participants as we could with the participant pool and the lab resource. We estimated a medium effect (*d* = .40) based on previous research (Choi, Koo, & Choi, 2007; Study 3) and conducted a post hoc power analysis using G*power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007). The results revealed that this sample size yielded adequate power for detecting a medium-sized effect (*r* = .30; $1 - \beta$ = .95).

Materials and procedure. We measured participants' analytic-holistic reasoning using the 24-item Analysis-Holism Scale (AHS; Choi, Koo, & Choi, 2007; *M* = 4.95, *SD* = 0.46, α = .80). AHS includes four subscales: PC (*M* = 4.70, *SD* = 0.78, α = .64; e.g., "Current situations can change at any time"), causality (CA; *M* = 5.43, *SD* = 0.84, α = .81; e.g., "Everything in the universe is somehow related to each other"), attitudes toward contradictions (AC; *M* = 4.62, *SD* = 0.52, α = .64; e.g., "It is more desirable to take the middle ground than go to extremes"), and locus of attention (LA; *M* = 5.08, *SD* = 0.83, α = .73; e.g., "The whole, rather than its parts, should be considered in order to understand a phenomenon") ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A higher score indicates greater holistic reasoning. We also obtained partici-pants' individualism-collectivism scores (Singelis, Triandis, Bhawuk, & Gelfand, 1995; *M* = 5.01, *SD* = 0.89, α = .79, *M* = 5.31, *SD* = 0.89, α =.82, respectively) on a scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Then, we asked participants to report their endurance in the face of relational transgressions. Specifically, participants rated how long they would be will-ing to wait until dissolving a romantic relationship following five types of relational transgres-sions of their partners on a 7-point scale (1 = *immediately break up*, 7 = *wait as long as it takes*). The relational transgressions included excessive drinking, disrespect, deception, verbal abuse, and flirting with others (Metts, 1994).[1] We then averaged the participants' responses to each type of transgression to create an index of their endurance against relational transgressions (*M* = 3.38, *SD* = 0.88, α = .65).

Results and Discussion

No gender differences were found in terms of waiting (M_{women} = 3.30, *SD* = 0.86 vs. M_{men} = 3.44, *SD* = 0.89), *t*(111) = .88, *p* = .381. The relation between PC and willingness to wait was also not affected by gender.[2]

To evaluate whether PC was associated with time needed before deciding to break up with romantic partners, we correlated each of the four subscales of the AHS with participants' willing-ness to remain in a relationship after imagining their partner's transgressions. As presented in Table 1, only PC scores were related to their willingness to wait (*r* = .21, *p* = .026), indicating that perceiving change in a cyclic manner motivates individuals to hold on dissolution. This posi-tive correlation was significant after controlling for gender, r_{partial} = .21, *p* = .027. Moreover, individualism and collectivism scores were not correlated with willingness to wait (see Table 1). A multiple regression analysis further confirmed this pattern. As shown in Table 2, PC signifi-cantly predicted greater willingness to wait, whereas any of the subscales of the AHS did not. When including individualism and collectivism scores as predictors, the analysis revealed that PC scores were the only significant predictor (see Table 2).

Study 1 provided the initial evidence that cyclic PC is associated with greater endurance against a partner's relational transgressions. We found that participants who endorsed cyclic PC were more willing to wait until breaking up with a hypothetical romantic partner committing relational transgressions. Moreover, none of the subcomponents of holistic thinking nor individ-ualism-collectivism scores other than PC were associated with willingness to wait until breaking up with romantic partners. Overall, the results suggest that cyclic perceivers take longer to with-draw from their partners than linear perceivers.

Table 1. Zero Correlation Coefficients Among Variables in Study 1.

Measure	1	2	3	4	5	6	7
1. WTW	—						
2. PC	.209*	—					
3. AC	−.024	.113	—				
4. CA	.095	.272**	.156†	—			
5. LA	.021	.061	.132	.306**	—		
6. IND	.089	−.055	.020	.059	.054	—	
7. COL	.009	−.146	.259**	.141	.324***	.336***	—

Note. WTW = willing to wait; PC = perceptions of change; AC = attitudes toward contradictions; CA = causality;
LA = locus of attention; IND = individualism; COL = collectivism.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 2. Multiple Regression Analyses: Predicting Willingness to Wait From Subscales of AHS,
Individualism, and Collectivism in Study 1.

	Willingness to wait									
	Model 1					Model 2				
Predictor	B	β	t	p	R^2	B	β	t	p	R^2
PC	.228	.202	2.069	.041	.220	.242	.214	2.128	.036	.241
AC	−.091	−.054	−0.564	.574		−.102	−.061	−0.609	.544	
CA	.050	.048	0.463	.644		.042	.04	0.384	.702	
LA	.002	.002	0.016	.987		−.009	−.008	−0.079	.938	
IND						.092	.092	0.917	.361	
COL						.022	.023	0.202	.840	

Note. AHS = Analysis-Holism Scale; PC = perceptions of change; AC = attitudes toward contradictions; CA =
causality; LA = locus of attention; IND = individualism; COL = collectivism.

Table 3. Zero Correlation Coefficients Among Variables in Study 3.

Measure	1	2	3	4	5
1. Breakup	—				
2. PC	−.242*	—			
3. Frequency	.164	−.003	—		
4. Satisfaction	−.203†	.078	−.171	—	
5. Optimism	−.154	.265**	.161	.152	—

Note. Breakup was coded as 1 (*broken up*) and 0 (*still together*). PC = perceptions of change.
†$p < .10$, *$p < .05$, **$p < .01$.

Study 2a

If cyclic perceivers are more tolerant toward relational hardships than linear perceivers, a natu-ral relational outcome would be that the former experiences fewer relationship turnovers than the latter. Study 2a examined whether cyclic perceivers' greater relational endurance results in a smaller number of relational turnover (i.e., the frequency of breakups) than linear perceivers. Moreover, we tested whether the association between cyclic PC and fewer prior romantic rela-tionships was mediated by greater relational endurance during hardships. In addition, we

recruited a sample of adults, not college students, to extend our findings to a more general population.

Method

Participants. In attempting to extend our results from Study 1 beyond the college population, we recruited 138 unmarried Korean adults who had been involved in a dating relationship in exchange of financial compensation for their participation (96 women, 42 men, M_{age} = 24.87 years, SD = 4.00). An a priori power analysis yielded a sample size of 111 to achieve a power equal to .95 with a medium effect (r = .3) and an alpha level of .05. We aimed to recruit at least 111 participants and ended up with 138.

Materials and procedure. Participants' PC was assessed using the six-item subset of AHS (M = 4.69, SD = 0.80, α = .63). Participants also reported the frequency of their romantic relationship turnover by indicating the total number of people that they had dated (M = 3.07, SD = 1.63, ranging from 1 to 7). A higher number indicates greater relationship turnover. Finally, to examine whether the fewer number of prior relationships by cyclic perceivers was, indeed, mediated by their stronger relational endurance, we asked participants to indicate their agreement to the statement that "It is not wise to break up with a romantic partner as soon as problems arise" on a 7-point scale (1 = *not at all*, 7 = *very much; M* = 6.01, SD = 1.07).

Results and Discussion

We expected that cyclic perceivers report fewer romantic partners in total, and this was, indeed, the case. PC was negatively associated with the total number of past romantic partners, r = −.22, p = .008, indicating that cyclic perceivers dated fewer romantic partners than linear perceivers. As the number of participants' past romantic relationships may correspond to the amount of time they have spent in the dating market, we controlled for age and found a nearly identical pattern, r = −.20, p = .022.[3] PC was also positively associated with relational endurance, r = .23, p = .007, and relational endurance was negatively associated with the total number of past partners, r = −.26, p = .002.

We used R statistical package (R Core Team, 2014) to run a Poisson regression to examine whether participants' relational endurance mediated the association between PC and the frequency of breakups.[4] We regressed the frequency of breakups on PC, and the results revealed that higher PC scores predicted a fewer number of breakups experienced, B = −.93, 95% confidence interval [CI] = [−2.13, −.19], p < .001 (bootstrap = 10,000). The predictability of PC scores for the number of past breakups remained significant when controlling for the mediator, B = −.75, 95% CI = [−1.85, −.07], p = .02 (bootstrap = 10,000). The indirect effect of PC on the number of past breakups through the mediator was significant, B = −.18, 95% CI = [−0.48, −.009], p = .03 (bootstrap = 10,000). The results yielded very similar results when the age was included in the indirect model.[5]

Study 2b

In Study 2b, we attempted to examine the underlying mechanism by which the cyclic PC discourages relationship dissolution using the relational endurance measure that is psychometrically more valid. Specifically, we measured participants' relational endurance using a three-item scale including the single item used in Study 2a and assessed participants' willingness to break up from relational transgressions.

Method

Participants. We recruited 143 students who have been involved in a dating relationship at a large university in Korea (72 women, 71 men, M_{age} = 21.41 years, SD = 2.22). An a priori power analysis showed that we need at least 111 participants to achieve a power equal to .95 with a medium effect (r = .3) and an alpha level of .05. Therefore, we attempted to collect a sample of at least 111 participants and ended up with 143. Participants received partial course credit for their participation.

Materials and procedure. Participants' PC was assessed using the six-item subset of AHS (M = 4.69, SD = 0.80, α = .66). Similar to Study 1, participants were given five hypothetical scenarios of relational transgressions. The five cases of the transgression included disrespect, deception, physical fight, flirting with another, and mistrust. Then, we asked participants to report their willingness to break up from relational transgressions by answering two questions (i.e., "To what extent would you want to dissolve this relationship" and "To what extent would you decide to break up from this problem?") on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*). We then averaged participants' responses to each type of transgressions to create an index of their willingness to break up (M = 4.79, SD = 0.96, α = .66). Finally, we measured participants' relational endurance with three items including the single item used in Study 2a (i.e., "It is not wise to break up with a romantic partner as soon as problems arise," "When faced problems with a romantic partner, I should wait as long as I can before deciding to break up," and "I should break up with my romantic partner immediately once recognizing a problem"; reverse-coded). Participants indicated the extent to which they agree with each of the three sentences on a 7-point scale (1 = *not at all*, 7 = *very much*; M = 5.12, SD = 1.16, α = .65). To ensure the psychometrical validity of the measure, we conducted a confirmatory factor analysis to examine the fitness of the one-factor model using Mplus (version 8.0; Muthén & Muthén, 1998-2017). The one-factor model revealed good model fit, root mean square error of approximation (RMSEA) = 0, 90% CI = [0, .057], comparative fit index (CFI) = 1.000, Tucker–Lewis index (TLI) = 1.046, indicating the validity of the measure.

Results and Discussion

We expected that cyclic perceivers are less willing to break up with their romantic partners from relational problems than linear perceivers as they hold stronger relational endurance. PC was negatively associated with willingness to break up, r = −.185, p = .027, and positively associated with relational endurance, r = .17, p = .040, and relational endurance was negatively associated with willingness to break up, r = −.35, p < .001. We conducted a mediation analysis to examine whether participants' relational endurance, in fact, mediated PC on the willingness to break up. First, we demonstrated that PC was significantly associated with participants' relational endurance (b = .26, SE = .13, t = 2.08, p = .040). We then showed that PC was significantly associated with the willingness to break up (b = −.23, SE = .10, t = −2.24, p = .027). Finally, when PC and the relational endurance were included as the predictors simultaneously, PC (b = −.16, SE = .10, t = −1.62, p = .107) was no longer significantly associated with the willingness to break up, whereas relational endurance (b = −.27, SE = .07, t = −4.06, p < .001) remained to have a significant negative association with the willingness to break up. The bias-corrected bootstrapping procedures confirmed this indirect effect (b = −.07, SE = .05), 95% CI = [−.18, −.003] (N = 5,000), indicating that relational endurance played a mediating role (Preacher & Hayes, 2008).

Studies 2a and 2b successfully replicated the findings of Study 1 and extended the results in three aspects. First, Study 2a addressed the limitation of using hypothetical scenarios by measuring participants' actual relational experience (i.e., the number of past breakups). Second, Study

2a extended our findings to a more general population, beyond the college sample. Finally, we found the underlying mechanism by which PC predicts the relationship turnover. Namely, cyclic perceivers' stronger relational endurance mediated the link between the cyclic PC and the fewer number of breakups (Study 2a) and willingness to break up (Study 2b). In short, Studies 2a and 2b suggest that cyclic perceivers are less willing to break up and less likely to experience break-ups due to their greater relational endurance.

Study 3

Studies 1 and 2 provided converging evidence that people with the cyclic PC take longer to dissolve romantic relationships. However, one could argue that cyclic perceivers experience less relationship turnover not because they are more tolerant of relational hardships, but because they are less likely to enter into a romantic relationship in the first place. According to this alternative view, the fewer number of breakups is not an indication of willingness to remain in a relationship, but an indication of self-selection bias in relationships. A critical test to address this self-selection issue would be a longitudinal study examining whether the cyclic PC at Time 1 would predict fewer breakups at Time 2 while controlling for the number of previous relationships measured at Time 1. Hence, we conducted a year-long, two-wave longitudinal study of dating couples. We also assessed relationship satisfaction to show how meaningful the effect of PC on relationship longevity would be even after controlling for relationship satisfaction, which is a potent predictor for relationship dissolution (Le et al., 2010). We also measured participants' generalized optimism to account for an alternative explanation. That is, optimists' high hopes for the best outcome would enhance relationship longevity by helping them confer resilience to stressful events (Solberg Nes & Segerstrom, 2006). Thus, we tested whether PC would still predict relationship longevity after controlling for general optimism.

Method

Participants. In total, 142 students at a public university in Korea were recruited to participate in the study (71 women, 69 men, 2 unreported, M_{age} = 22.23 years, SD = 2.01). All participants were in a romantic relationship at the time they were recruited (Time 1). We recontacted participants 1 year later (Time 2), and only 95 responded back (38 men, 57 women, M_{age} = 22.17 years, SD = 2.08). An a priori power analysis revealed that we need at least 74 participants to obtain a power of .95 for detecting a medium effect size (f^2 = .15) at an alpha level of .05. Participants received financial compensation for each time participating in the study.

Materials and procedure. At Time 1, participants' PC was assessed using the AHS (M = 4.10, SD = 0.78, α = .66). They indicated their total numbers of past romantic partners (M = 2.46, SD = 1.70) and satisfaction of their current relationship on a 7-point scale (1 = *not at all satisfied*, 7 = *very satisfied; M* = 5.93, SD = 1.12).[6] We also measured participants' generalized optimism using a 10-item Life Orientation Test–Revised scale (LOT-R; M = 3.88, SE = .65, α = .83; Scheier, Carver, & Bridges, 1994). Participants indicated the extent to which they agree with six statements (e.g., "In uncertain times, I usually expect the best," "Overall, I expect more good things to me than bad") on a 5-point scale ranging from 1 (*I disagree a lot*) to 5 (*I agree a lot*). Higher score indicates greater generalized optimistic thinking. At Time 2, participants self-reported whether they were still in a dating relationship with the partner from Time 1. Out of 95 participants who completed the surveys at both Times 1 and 2, 65 participants reported to be in the relationship with the same romantic partner.

Table 4. Multiple Binary Logistics Analyses: Predicting Breakup (Time 2) From PC, Age, Total Number of Past Romantic Partners, and Relationship Satisfaction (Time 1) in Study 3.

	Breakup (Time 2)									
	Model 1					Model 2				
Predictor (Time 1)	B	SE	p	OR	95% CI for OR	B	SE	p	OR	95% CI for OR
PC	−.662	.290	.022	0.516	[0.29, 0.910]	−.538	.303	.075	0.584	[0.32, 1.06]
Age	−.066	.117	.575	0.936	[0.74, 1.18]	−.151	.129	.244	0.860	[0.67, 1.11]
# of PRP	.260	.150	.084	1.297	[0.97, 1.74]	.242	.172	.158	1.274	[0.91, 1.78]
RS						−.420	.244	.085	0.657	[0.41, 1.06]

Note. Breakup: 0 = *still together*, 1 = *broken up*. PC = perceptions of change; PRP = past romantic partners; RS = relationship satisfaction; OR = odds ratio; CI = confidence interval.

Results and Discussion

We used binary logistics (0 = *still together*, 1 = *broken up*) to examine whether cyclic perceivers at Time 1 were more likely to remain in their relationships at Time 2 than linear perceivers. As expected, cyclic PC at Time 1 predicted breakups at Time 2 ($b = -.66$, $SE = .29$, $p = .022$), indicating that cyclic perceivers were more likely to remain together a year later than linear perceivers. This effect remained significant even after controlling for age and the total number of past romantic partners, which is a potential proxy of the self-selection variable according to the alternative explanation ($b = -.66$, $SE = .29$, $p = .022$ for PC; $b = -.07$, $SE = .12$, $p = .58$ for age; and $b = .26$, $SE = .15$, $p = .084$ for the total number of past romantic partners). Moreover, when we included relationship satisfaction in the model, PC still marginally predicted breakup ($b = -.54$, $SE = .30$, $p = .075$ for PC; $b = -.15$, $SE = .13$, $p = .244$ for age; $b = .24$, $SE = .17$, $p = .158$ for the total number of romantic partners; and $b = -.42$, $SE = .24$, $p = .085$ for relationship satisfaction; see Table 4).[7]

Furthermore, we tested a possible interaction of PC and relationship satisfaction on breakup. It is possible that PC plays a greater role for those in unsatisfying relationships than those in satisfying relationships (motivated cognition). Alternatively, PC may play similar roles in unsatisfying and satisfying relationships (trait-like cognition). The results revealed no significant interaction ($b = -.52$, $SE = .30$, $p = .086$, for PC; $b = -.36$, $SE = .24$, $p = .124$, for relationship satisfaction; $b = -.004$, $SE = .34$, $p = .990$, interaction of the two), indicating that cyclic PC may enhance couples' relationship longevity above and beyond the relationship satisfaction.

Last, we found that PC was positively related to optimism, $r = .265$, $p = .009$ (see Table 3). To examine whether PC predicted breakup while controlling for optimism, we ran binary logistics on breakup with PC and optimism as predictors. PC significantly predicted breakup at Time 2, $B = -.61$, $SE = .30$, $p = .041$, whereas optimism did not, $B = -.33$, $SE = .35$, $p = .345$, providing evidence that PC is predictive of breakup over and above optimism.

Overall, Study 3 found that cyclic PC predicted fewer breakups over 1 year. Importantly, speaking against the alternative account (i.e., self-selection bias), results showed that cyclic PC predicted longer stay in relationships regardless of the total number of past dating partners, as well as beyond relationship satisfaction and optimism.

Internal Meta-Analysis

In four studies, we estimated medium-sized effects ($r = .30$) for the negative association between PC and breakup, based on a previous study (Choi, Koo, & Choi, 2007). However, each of the current studies revealed small- to medium-sized effects ($r = .209$, $r = .224$, $r = .185$, $r = .242$).

Moreover, power analyses using the G*power software (Faul et al., 2007) indicated that the sample sizes used in four studies ($N = 113$ for Study 1, $N = 138$ for Study 2a, $N = 143$ for Study 2b, and $N = 95$ for Study 3) were not sufficient to detect the effects we found. To address this power issue, we conducted an internal meta-analysis to provide a cumulative and precise estimation of the effect, as recommended in previous research (e.g., Goh, Hall, & Rosenthal, 2016).

We conducted a random-effects meta-analysis to examine whether PC was associated with relationship longevity across Studies 1 through 3 using the *R* statistical package metafor (Viechtbauer, 2010). For the analysis, we used Pearson correlation as effect size and transformed it to Fisher's *z*. We then back-transformed to Pearson correlation for presentation. Consistent with our results in the individual studies, the meta-analysis found an overall effect that cyclic PC was negatively associated with relationship breakup, *Mr* $= -.216$, $p < .0001$. Moreover, this meta-analytic finding suggests that the cumulative effect size for the present study was small to medium.

General Discussion

Many studies have documented evidence that individual differences in various cognitive dispositions contribute to relationship longevity and dissolution (e.g., Srivastava et al., 2006). The present study offers a new understanding of how change beliefs play a significant role in decision-making in romantic relationships. When making predictions about the future, cyclic perceivers assume that everything is in flux and subject to change. This suggests that cyclic PC should encourage individuals to remain hopeful when suffering from relational problems because they tend to believe that "the darkest hour is just before the dawn." Supporting this notion, we garnered evidence that cyclic thinking keeps people in relationships longer by helping them endure relational adversities.

In Studies 1 through 2b, we documented converging evidence that compared with linear perceivers, cyclic perceivers tend to stay longer in romantic relationships with greater endurance in the face of relational hardships. In Study 1, we found that compared with linear perceivers, cyclic perceivers were more willing to remain in a romantic relationship after imagining hypothetical transgressions by their partner (e.g., disrespect, flirting with others). In Studies 2a and 2b, cyclic perceivers reported a fewer number of past breakups (Study 2a) and showed less willingness to break up (Study 2b) than linear perceivers, and this was explained by cyclic perceivers' stronger relational endurance during hardships. Using a year-long, two-wave longitudinal design, Study 3 further demonstrated that cyclic perceivers were more likely to remain in their romantic relationships over 1 year than linear perceivers, and this pattern was not explained by their relationship history (i.e., total number of past breakups) and still remained beyond relationship satisfaction. Taken together, our findings suggest that individual differences in PC influence decision-making processes for relationship dissolution.

The present study can be extended in a cross-cultural setting. Previous research has demonstrated that cultural beliefs influence individuals' interpersonal experiences. For example, Ho and Fung (2011) suggested that dialectical thinking (i.e., a feature of analytic-holistic reasoning), known to be prevalent in the East Asian culture, may promote forgiveness. Dialectical thinking involves taking multiple perspectives and a belief that hardships may lead to growth. Therefore, dialectical thinkers can interpret their partner's transgression as one of many other occasions (e.g., he only cheated on me this time) and having potential for growth (e.g., our relationship will be strengthened). Likewise, East Asians, who are known for their cyclic change belief, may be more likely to maintain relationships than North Americans, who tend to believe in linear change. Indeed, studies have found that Asian women's first marriages dissolve at a slower rate than any other ethnic group. Only 20% of Asian women disrupted their first marriage after 10 years of marriage, while 32% of White women, 32% of Hispanic women, and 47% of Black women did so in 1995 (Bramlett & Mosher, 2002). According to data from the U.S. Census Bureau (2005),

the median duration of a first marriage of Asian American women (approximately 9.0 years) was slightly longer than White American women (7.8 years), Black American women (8.4 years), and Hispanic American women (8.1 years). There was mixed finding for American men (i.e., 8.3 years for Asian, 8.1 years for White, 8.9 years for Black, and 7.8 years for Hispanic). These findings on relationship longevity across different ethnic groups may be extended to a cross-cultural setting. For example, it would be intriguing to examine whether East Asians actually tend to stay longer in relationships than European North Americans due to the cultural difference in cyclic belief and relational endurance. Another interesting possibility is that cyclic PC serves an adaptive function. That is, East Asians may have developed their cyclic thinking tendency as an adaptive tool to justify their efforts to endure the hardships. Future research should examine if there is a motivational process by which a need to endure current difficulties promotes a cyclic belief in predicting changes in the future.

It is worth revisiting the notion that PC functions as a defender against relational transgressions and hardships and thus helps maintain relationships during bad times. Theoretically, cyclic PC should also encourage breakups of healthy relationships because cyclic perceivers also believe that good times too shall pass. However, our findings speak against this possibility. While Studies 1 and 2b focused on the role of PC only in relational hardships, Studies 2a and 3 demonstrated that cyclic perceivers were more likely to preserve their relationships even in the absence of valence of the relationships (i.e., satisfying or unsatisfying). This is consistent with the relationship literature demonstrating that satisfied couples tend to view their relationship in a positive light and are less attentive to alternatives (Miller, 1987; Murray et al., 1996). However, when things go bad, they start to ponder about why they are in the current relationship and compare their partners with potential alternatives (Drigotas & Rusbult, 1992; Miller, 1987). Therefore, that cyclic PC makes people expect that bad times will turn into good times may not work in the reverse direction in close relationship settings.

Furthermore, our results suggest a possibility that PC may also enhance relationship longevity in satisfying relationships, which awaits future research. Given that PC is a trait-like cognitive style that may operate independently of one's motivation, cyclic perceivers may also expect forthcoming hardships during good times. Ironically, being wary of downward changes or misfortunes may allow cyclic perceivers to be emotionally and strategically prepared to encounter hardships and handle them more wisely, thereby maintaining their healthy relationships even longer. In contrast, linear thinkers would feel despondent about unexpected hardships, which will lead them to give up more easily rather than work on the problem. Although Study 3 showed that cyclic PC reduced the likelihood of breakup even in satisfying relationships, our data are still limited in directly testing the effect of PC on relationship longevity during good times. A future study is warranted to thoroughly examine the role of PC during good times and the psychological processes (e.g., preparing for hardships during good times) by which cyclic perceivers maintain satisfying relationships.

Although optimism, relationship satisfaction, and cyclic PC may seem to work similarly on relationship longevity by empowering couples to get through relational hardships, our findings that cyclic PC predicted fewer breakups over and above relationship satisfaction and optimism suggest that the psychological mechanisms of which they operate are different. Optimism and relationship satisfaction put rose-colored glasses on people to be positively biased about uncertain situations, expecting the best to happen to their relationships. Therefore, optimism and relationship satisfaction rather motivate people to get through hardship by magnifying the positive evaluation of their own relationship and partner, for example, inflating perceived partner support (e.g., Srivastava et al., 2006). In contrast, cyclic PC features flexibility in thoughts that enables people to maintain their relationships by prospecting good times and perhaps by preparing them for hardships. In the future research, it would be intriguing to examine whether optimism and

relationship satisfaction predict one's own relationship longevity, while cyclic not only predicts one's own but also that of others as well.

The present study raises an intriguing question: Which of the two perceptions (cyclic vs. linear) of change is a wiser way of thinking? Research on reasoning has shown that "wise reasoning" leads to a good life and greater life satisfaction. Indeed, this wise reasoning is found to particularly predict interpersonal benefits, such as better relationship quality and a more positive way of talking about social conflicts (Grossmann, Na, Varnum, Kitayama, & Nisbett, 2013). The components of wise reasoning such as dialectical thinking, recognition of change, and importance of compromise suggest a possibility that holistic thinking may also be a wise way of thinking (Grossmann et al., 2013; Kramer, 2000). Holistic thinking, in general, and the cyclic PC, in particular, may promote individuals to consider the relationship as a whole, examining past and other behaviors, and weighing the advantages and disadvantages of remaining in the relationship. This leads us to ask, would cyclic perceivers who see their relationship positively be better off enduring hardships and working through the challenges together to salvage their relationships, or would linear perceivers be better off dismissing partners who cause relational stresses and beginning a new life without them? Individuals may psychologically and relationally benefit from taking more time before deciding to break up. This might bring greater success in saving their relationship and learning from experiences. However, it could also be problematic if people devote considerable time and energy in false hopes or ill fates, by persisting in dysfunctional relationships. A future study should examine the psychological consequences of persisting from cyclic thinking in various relationships, from casual relationships to marriage.

In conclusion, the present research has shown that individual differences in PC play an important role in deciding whether to remain in or terminate a romantic relationship during hardship. Compared with linear perceivers, cyclic perceivers tend to stay longer in relationships with the hope that relational problems "too shall pass."

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Notes

1. We included items that are commonly experienced by college students. We chose relatively mild transgressions for our participants as they are in their first or second year of college and are not likely to be in committed relationships (e.g., engagement, marriage). We have not conducted a pilot study before selecting these five transgressional behaviors.

2. Perceptions of change (PC) and breakup were negatively associated across studies even when we covariated out gender, and thus we will not report it hereafter.
3. The correlation between age and the number of previous romantic partners was marginally significant, $r = .142, p = .098$.
4. We performed a Poisson regression because our outcome variable (i.e., the number of past relationship breakups) is a count variable. Thus, the distribution of our outcome variable was Poisson-distributed and not normally distributed. The distribution of the number of past relationship breakups was as follows: 21% of one, 14.5% of two, 32.6% of three, 15.2% of four, 7.2% of five, 4.3% of six, and 5.1% of seven breakups.
5. The direct effect of PC on the number of breakups was significant, $B = −.93$, 95% confidence interval [CI] = [–2.13, –.19], $p < .001$ ($N = 10,000$). The direct effect of PC on the number of breakups controlling for the mediator was significant, $B = −.75$, 95% CI = [–1.85, –.07], $p = .02$ ($N = 10,000$). The indirect effect of PC on the number of breakups through the mediator was significant, $B = −.18$, 95% CI = [–.48, –.009], $p = .04$ ($N = 10,000$). Ordinary least squares regressions yielded very similar results. PC was significantly associated with participants' relational turnover ($b = −.46, t = −2.68, SE = .17, p = .008$). PC was significantly associated with the relational endurance ($b = .31, SE = .11, t = 2.73, p = .007$). When PC and the relational endurance were included as the predictors simultaneously, PC ($b = −.36, SE = .17, t = −2.08, p = .04$) and relational endurance ($b = −.33, SE =.13, t = −2.56, p = .012$) significantly predicted relational turnover. The bias-corrected bootstrapping procedures confirmed this indirect effect ($b = −.10, SE = .063$), 95% CI = [–.266, –.009] ($N = 10,000$).
6. We measured relationship satisfaction only at Time 1 as we expected that some participants would have broken up at Time 2. We would not accurately access relationship satisfaction at Time 2 because participants who were in the same relationship at Times 1 and 2 would report their current relationship satisfaction, whereas participants who had been broken up would retrospectively report their relationship satisfaction from Time 1. Moreover, we are not proposing that cyclic PC is related to greater relationship longevity due to their higher relationship satisfaction, and we did not find a significant association of the two, $r = .08, p = .483$.
7. A total of 13 participants did not report their relationship satisfaction, thus, were excluded in the analyses that included relationship satisfaction. The total number of participants included in these particular analyses was 82 (32 women, 50 men, $M_{age} = 22.17, SD = 2.05$). Out of 83 participants, 29 reported to have been broken up at Time 2.

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