HOW DOES SOCIAL CYNICISM AFFECT PSYCHOLOGICAL
WELL-BEING?

THE MEDIATING ROLE OF ATTENTION AND MEMORY OF
NEGATIVE INFORMATION

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Abstract

Research on world-views and psychological well-being is burgeoning. Cynical world-view has been consistently found to predict various well-being indicators at both individual and culture levels. Yet, empirical studies examining the underlying process between cynical world-view and psychological health are scarce. Based on social schema theory and heightened attention hypothesis, while handling different information, the survival instinct deeply rooted in social cynics motivates them to stay away from potential hazards by enhancing sensitivity to negative information, which in turn dampens their psychological health. To test the proposed mechanism, three studies were conducted using multiple methods, namely cross-sectional design ($N = 394$ in Study 1), longitudinal design ($N = 77$ in Study 2), and diary design ($N = 264$ in Study 3). Results indicated that cynical world-view explained additional variance in diversified psychological well-being indicators over and above one's self-view. Across three studies, results converged and confirmed the full mediation model; social cynics revealed elevated attention to negative information and amplified perceived vividness of negative memory, in turn reporting poor psychological well-being. Additional analyses showed that this indirect effect did not work for self-view to affect psychological well-being. Overall, the present research identified a process model underlying the function of world-views and highlighted the distinction between world-views and self-views in terms of their predictabilities.

Keywords: world-views, social axioms, social cynicism, cognitive processing, psychological well-being

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Introduction

The increased popularity of cognitive therapy (Todd & Arthur, 1994) calls our

attention to the role of cognition in promoting one's well-being. Beliefs are

cognitive constructs that delineate the characteristics of an object and its relations

with other objects (Katz, 1960). Many of the cognitive constructs are in

self-viewed nature, assessing the way we see ourselves. Self-views, such as

self-esteem (Rosenberg, 1965), self-efficacy (Bandura, 1997), and self-construals

(Markus & Kitayama, 1991), have always been a long-standing interest and

investigated extensively in the literature (see Swann, Chang-Schneider, &

McClarty, 2007). However, few of the cognitive constructs are concerning our

external world as a target. About a decade ago, a multicultural study has been

conducted to develop the Social Axioms Survey tapping world-views – the

perception of our social world (Leung et al., 2002). Studies have been conducted to

examine the association between self-views and world-views, showing that there is

only modest overlap between them, which supports the uniqueness and

distinctiveness of world-views from self-views (e.g., Chen, Bond & Cheung, 2006;

Chen, Fok, Bond, & Matsumoto, 2006). Among different world-views, social

cynicism has been consistently shown to predict psychological well-being over and above self-views (Chen, Cheung, Bond, & Leung, 2006). Previous studies proposed different underlying mechanisms, such as self-fulfilling prophecy and heightened attention hypothesis, to account for the effects of world-views on psychological well-being. Yet, empirical studies testing these explanations are scarce. Therefore, a question is being raised: how do social beliefs affect psychological well-being?

World-views

Leung and colleagues (2002) redirected researchers' attention from self-views to world-views, and introduced a theoretical construct termed "social axioms" which focuses on how people perceive the external world (Leung et al., 2002). The label "axiom" reflects the axiomatic nature; without scientific validation and meticulous scrutiny, one would still assume the truthfulness. The label "social" represents the assumption that these axioms may be acquired through social experiences. Social axioms are defined as "generalized beliefs about people, social groups, social institutions, the physical environment, or the spiritual world as well as about categories of events and phenomena in the social world" (Leung & Bond, 2008, p. 198). The items of social axioms measure pure beliefs which are cognitive in nature, and the context of its items are embedded in the external world. Thus,

social axioms can be conceptualized as an additional and appropriate construct to examine the influences of cognition on one's well-being in the literature.

Upon the initial development of social axioms (Leung et al., 2002), Leung and Bond (2004) conducted a multicultural study in 40 cultures to further verify the pancultural factor structure of social axioms. Social axioms are not merely cultural-level measurements, but also a psychological construct tapping individual differences just like personality traits and values (Deng, Guan, Bond, Zhang, & Hu, 2011; Leung, Ip, & Leung, 2010). Five axioms including Social Cynicism, Social Complexity, Reward for Application, Religiosity, and Fate Control have been identified at the individual level (Leung & Bond, 2004), while there are two dimensions at the culture level, namely Societal Cynicism and Dynamic Externality (Bond et al., 2004).

Subsequently, the factor structures at both individual and culture levels have been tested by a more rigorous statistical method. Cheung, Leung, and Au (2006) employed a multilevel factor analysis, which enables them to test two factor structures simultaneously and take the multilevel structure into account, further confirming the factorial validity. Specifically, social cynicism indicates a negative view of human nature, a biased attitude toward some groups of people, a mistrust of social institutions, and a disregard of ethical means to achieving an end. Reward

for application refers to a belief that efforts invested in human resources will lead to positive outcomes. Social complexity depicts a belief in situational flexibility and inconsistency in human behavior, denoting that there are multiple solutions to social problems and different ways of achieving various outcomes. Fate control refers to a belief that life events are pre-determined and influenced by impersonal, external forces, but predictable and alterable. Religiosity portrays a belief about the positive, personal, and social consequences of religious practices, along with the belief in the existence of a supreme being.

Apart from the factorial validity, discriminant validity of social axioms has been well-documented (Hui & Hui, 2009). For instance, social axioms showed statistically significant but low correlations with values (Bond et al., 2004; Leung, Au, Huang, Kurman, Niit, & Niit, 2007) and personality traits assessed by both universal and indigenous measures (Chen et al., 2006a; Chen et al., 2006c). These findings indicated that social axioms could be successfully distinguished from other relevant constructs, supporting its uniqueness and distinctiveness.

Theorizing on the utility of social axioms, a functionalist approach speculates that beliefs impact human beings with four basic functions, which are instrumental, ego-defensive, value-expressive, and knowledge (Leung et al., 2002). Therefore, social axioms should predict different broad and specific psychological constructs.

A series of studies have empirically demonstrated the functional utility of social

axioms in a wide range of domains. For example, social axioms, which serve as the

general knowledge about the world, predicted different attitudes and behavioral

tendencies, such as vocational interests (Bond et al., 2004), attitudes towards

help-seeking (Kuo, Kwantes, Towson, & Nanson, 2006), suicidal ideation (Chen,

Wu & Bond, 2009), political attitudes (Leung et al, 2002), paranormal beliefs

(Singelis, Hubbard, Her, & An, 2003), cognitive flexibility (Singelis, Hubbard, Her,

& An, 2003), filial behavior (Chen, Bond, & Tang, 2007), individuating behavior

(Chen, 2009), conflict resolution styles (Bond et al., 2004), and acculturation

orientation (Safdar, Dupuis, Lewis, El-Geledi, & Bourhis, 2008). Other than

attitudinal and behavioral measures, social axioms have been found to be the

significant predictors of various well-being indicators (Chen et al., 2006b; Lai,

Bond, & Hui, 2007; Neto, 2006).

Social Cynicism and Well-being

Among the five social axioms, social cynicism is the main focus of the present

research. This social belief is reminiscent of Machiavellianism (Christie & Geis.

1970), Freudian ethic (La Piere, 1959), and Wrightsman's (1992) assumptions of

untrustworthiness and selfishness. Despite the limited overlap, the pure belief items

in social cynicism distinguish itself from these scales, minimizing the confounding

effects of mixed components, such as evaluative, affective, and behavioral components. Moreover, most of these scales focus on the actor, while the target of social cynicism is external world.

Social cynicism is especially relevant to the present research due to its well-established association with psychological health. It has been proposed that social cynics are unable to cope with their social world effectively (Leung and Bond, 2004), and studies even found that social cynicism was consistently correlated with a wide range of psychological health indicators at both individual and culture levels. For instance, people with high social cynicism tend to report low life satisfaction (Chen et al., 2006b; Dinca & Iliescu, 2009; Lai et al., 2007), high levels of loneliness (Neto, 2006), high perceived stress (Kuo et al., 2006), decreased job satisfaction (Leung et al., 2010), heightened social anxiety (Lo, 2006), and more depressing thoughts (Chen et al, 2009). Thus, to address how world-views influence psychological well-being, the present research targeted at social cynicism and its robust association with psychological well-being.

The effect of social cynicism on psychological health can be explained by self-fulfilling prophecy, which refers to a notion that people perceive, act, and interact in accordance with their expectation, thereby shaping their own social realities (Jussim, 1986; Merton, 1948). Social cynics are postulated to internalize

the social rejection and negative social feedback resulting from their cynical world-view, and may therefore stay away from activities requiring high social engagement. Finally, this voluntary disengagement shields their own social world from positive feedback, thereby influencing their psychological health and simultaneously reinforcing their cynical world-view (Bond et al., 2004; Hui & Hui, 2009; Lai et al., 2007; Li et al., 2011). In the literature on social psychological processes underlying beliefs, self-fulfilling prophecy is one of the most widely known and powerful explanations for how beliefs create reality (Snyder, 1984). Yet, the aforementioned self-fulfilling effect of social cynicism is speculative; empirical studies testing the validity of self-fulfilling prophecy in social cynicism are limited. Hence, the present research aims to examine the mediators underlying the linkage between social cynicism and psychological well-being.

Schematic Processing in Social Cynicism

To hypothesize the underlying mechanism between social cynicism and psychological well-being, the cognitive concept of schema provides insights concerning how social cynicism works. Schema is regarded as a cognitive framework acquired through past experiences, and helps people organize social information, facilitate processing of information, and guide further actions (Baron & Branscombe, 2011). Human sensory and memory system generally encounters

more information than it can possibly handle. To reduce information overload,

schema helps people focus their attention on information which is likely to be

important and ignore information which is less important (Sweller, 1994; Wilson &

Anderson, 1986). Acting as a filter of information, schemas influence different

basic cognitive processes, such as attention and memory (Wyer & Srull, 1994). For

instance, Poon and Knight (2009) found that the activation of old age schema

influenced older adults' attention to physical symptoms. Henderson, Orbell and

Hagger (2009) found that individuals primed with "common cold" schema showed

more attentional bias toward common cold remedy work than individuals with

neutral prime, indicating that the illness schema predisposed individuals to enhance

attention to the coping information which fits the illness schema (see also

Meadowcroft & Reeves, 1989).

Furthermore, schemas influence our memory system, such that people tend to

report remembering information that is consistent with their schemas more than

information that is inconsistent (Wyer & Srull, 1994). For example, studies

demonstrated that participants with religious schema (as operationalized by high

religious fundamentalism) were able to remember judgmental information

regarding immoral behaviors more accurately than those with low religious

fundamentalism (Galen, Wolfe, Deleeuw, & Wyngarden, 2009; see also Cordua,

McGraw, & Drabman, 1979; Signorella & Liben, 1984). As indicated by these empirical studies on attention and memory, information consistent with our schemas is more likely to be noticed and recalled. How does schema relate to our beliefs about the social world? Indeed, schemas or scripts (Abelson, 1981; Rumelhart, 1984) have been theorized to be a process model underlying the formation and change of beliefs (Leung & Bond, 2004). In other words, our social beliefs, such as social cynicism, may function like schemas to organize information about the social world, through shaping our attention to and memory of information.

Attention to and Memory of Negative Information

Social beliefs have been theorized to serve the human functions of survival and adaptation (Leung & Bond, 2004). Survival entails the ability to deceive others and to detect deception, which has subsequently cultivated a cynical world-view. People with high social cynicism may consider negative information as very important due to its function to detect forthcoming threats and dangers. Following the logic of social schema theory, social cynics should show increased attention and memory while processing negative information. Although attention and memory are two independent basic cognitive processes, researchers suggested that they work closely in information-processing. In the dual-store model of memory

proposed by Atkinson and Shiffrin (1968, 1971), attention plays the role of transferring information in the sensory register system to working memory system, in turn entering long-term memory system. Therefore, basic cognitive processes of both attention and memory were investigated in the present study.

Studies have indicated that memory should not be considered as a unitary system and it can be distinguished between the number of memory items (quantity) and the resolution or precision of those memory representations (quality) (Awh, Barton and Vogel, 2007; Xu and Chun, 2006). In other words, individuals who can remember more information do not necessarily recall information more vividly and clearly. When social cynics regard negative information as important in preventing potential harms, they may pay enhanced attention to negative information. The elevated attention to negative information selects more negative information to be encoded into memory system, and therefore, they should remember more negative information than individuals with lower levels of social cynicism. However, this effect of attention could only be found on the quantity of memory, but not the quality (Murray, Nobre & Stokes, 2011), indicating that the attention to filtered information and the quality of memory representation are two relatively more separate cognitive processes. To test the mechanisms underlying more divergent cognitive processing, I focused on the basic cognitive processes of attention and

quality of memory. Hence, I predicted that social cynicism would predispose people to pay increased attention to negative information and to recall negative information vividly.

Aligned with the present prediction, Leung and colleagues (2010) put forward a heightened attention hypothesis to account for how social cynicism functions. They hypothesized that the schematic processing in social cynicism would guide individuals to attend to and register negative events as well as unfavorable outcomes on themselves and others. To test the validity of this cognitive framework on social cynicism, they investigated the moderating effect of positive experience on the relationship between social cynicism and job satisfaction. They speculated that one's positive experience would attenuate the negative influence of social cynicism. In support of the heightened attention hypothesis, social cynicism negatively predicted job satisfaction over time, suggesting that social cynics are more likely to notice and recall negative events at work, and therefore, less satisfied with their jobs. Most importantly, this negative effect of social cynicism was moderated by one's perceived well-being. In other words, when one fares well in life, there are less unpleasant incidents, thereby leaving less room for social cynicism to function.

In addition, studies on social axioms have provided support to the current

hypothesis; social cynicism was identified to predict different self-regulatory modes related to increased focus on negative information. For instance, social cynicism predicted decreased mindfulness (Hui & Bond, 2010), which has been shown to predict negativity bias in attitude formation (Kiken & Shook, 2011). Moreover, social cynics have been found to hold more avoidance motivation and assessment orientations, which regulate people to elevate sensitivity and responsiveness to dangers in social situations (Hui & Bond, 2010; Higgins et al., 2003; Lang, 1995). This pattern of information-seeking does not happen only in the face of neutral or unfavorable situation, but also in the face of positive outcomes (Aqueveque & Encina, 2010). Taken all these findings together, it is plausible that social cynicism would influence basic cognitive processes in handling negative information.

Similar to the concepts of behavioral inhibition and activation system as well as positive and negative affect (Elliot & Trash, 2002), information-processing propensity toward positivity and negativity should be interpreted as two independent factors (Noguchi, Gohm, & Dalsky, 2006). Specifically, increased attention to negative information does not necessarily lead to decreased attention to positive information. It is possible that some people are more sensitive to both negative and positive information than others. Therefore, apart from the

information-processing propensity toward negative information, the current research also examined the effect of positive information. Perhaps, decreased attention to and memory of positive information serve the same function as negative information does to channel the effect of social cynicism on psychological well-being.

The Present Study

To examine how world-views affect psychological well-being, the present research focuses on social cynicism because of its well-established association with psychological well-being at both individual and culture levels. Explanatory mechanisms underlying the linkage offered by previous studies, such as self-fulfilling prophecy and heightened attention hypothesis, are speculative in nature, and limited studies have tested these explanations empirically. Leung and colleagues (2010) have postulated and tested the heightened attention hypothesis empirically; however, their use of perceived well-being as a measure of positive life experiences might confound their findings. If heightened attention hypothesis is valid for social cynics, one's cynical world-view would affect the level of perceived well-being. Thus, perceived well-being might not be a reliable measure on positive life experiences. According to the social schema theory, social cynicism may function like schemas to affect one's basic cognitive processes in handling

information, such as attention and memory. That is, social cynics may pay more attention to negative information and may recall negative information with more vividness, intensity, and impact. Hence, I hypothesized that these basic cognitive processes would mediate the influence of social cynicism on psychological well-being (Figure 1). Two kinds of valence information, namely negative and positive information, were tested in the current research, even though negative information is more theoretically relevant. Based on the above conceptualizations, the following hypotheses are formulated:

H1: Attention to negative information would mediate the effect of social cynicism on psychological well-being, such that people with higher levels of social cynicism would attend more to negative information and in turn report poorer psychological well-being than those with lower levels of social cynicism.

H2: Memory of negative information would mediate the effect of social cynicism on psychological well-being, such that people with higher levels of social cynicism would recall negative information with more vividness, intensity, and impact and in turn report poorer psychological well-being than those with lower levels of social cynicism.

Three studies with multi-method approach were conducted to test the proposed mediation model (Figure 1). Studies 1 and 2 targeted the attention process,

whereas Study 3 focused on the memory process. Study 1 was a cross-sectional study using self-report measures to establish associations among social cynicism, attention to negative and positive information, and psychological well-being. Study 2 was a 3-month cross-lagged panel study investigating the causal directions and longitudinal mediating effect among the associations identified in Study 1. To verify the model in a real-life setting, Study 3 adopted a diary approach using ecological measures to test the mediating effect of memory of negative information. Although world-view has been theoretically and empirically distinguished from self-view, previous studies showed that there is still modest overlap between world-view and self-view (e.g., Chen, et al., 2006a; Chen et al., 2006c). Besides, self-view such as self-esteem, has been found to be a robust predictor of different psychological well-being indicators in both cross-sectional and longitudinal studies (Chen et al 2006b; Diener & Diener, 1995; Lai et al, 2007; Ye, Yu and Li, 2012). Hence, to unpack the unique prediction of world-view on psychological well-being, self-view was controlled in all analyses.

Study 1

Previous research has suggested the associations among social cynicism, basic cognitive processes in handling information, and psychological well-being (e.g., Leung et al., 2010). However, empirical studies directly testing the linkage among these constructs are scarce. This study therefore aims to test a mediation model (Figure 1), specifically examining the mediating effects of attention to negative and positive information. Methodologically, cross-sectional design is one of the most widely used designs for descriptive analysis, ascertaining associations among variables (de Vaus, 2001). To achieve the primary objective in the present research, cross-sectional design is ideal for the first study and therefore was adopted to test the proposed model.

Method

Participants and procedure

A total of 394 university students (302 females; M_{age} = 20.35, SD = 2.02) participated in this study. All participants were invited to take part in the present study through mass emailing. An online survey was used to collect responses in the current study. Participants were assured of confidentiality at the beginning of the survey and were asked to report demographic information at the end of the survey.

Measures

The questionnaires were administered in Chinese. Validated Chinese versions of all instruments were used. Yet, if an extant Chinese version is not available, the scales were translated from English into Chinese, back-translated by separate bilinguals, and then verified by another bilingual to ensure the equivalence of meanings on all items.

In the present study, instruments of social cynicism, attention to negative and positive information were used as the independent variable and mediating variables, respectively. For the outcome measure of psychological well-being, a latent construct of psychological well-being was derived by two well-being indicators, namely life satisfaction and subjective happiness. Empirical research has provided evidence that these two indicators can be regarded as a composite variable tapping psychological well-being (Ng & Chen, 2013). Apart from the key psychological constructs, self-view and demographic information including age and gender, were collected and controlled in all analyses to reduce possible confounding effects.

Cynical world-view. The 18-item subscale of social cynicism extracted from the Social Axioms Survey (SAS; Leung et al., 2002) was used to measure respondents' generalized social beliefs about the world. The SAS has been well validated across 40 cultural groups (Leung & Bond, 2004). A sample item includes: "Powerful people tend to exploit others." Responses of each belief statement were

anchored on a 5-point Likert scale ranging from 1 (*strongly disbelieve*) to 5 (*strongly believe*), with an alpha of .78 in this study.

Attention to negative and positive information. The 22-item Attention to Positive and Negative Information Scale (APNI; Noguchi et al., 2006) was used to tap the general tendencies to attend to and focus on positive and negative information. Sample items include: "I am quick to notice other people's faults (attention to negative information; ANI)" and "No matter who is smiling, I notice that happy face (attention to positive information; API)." Responses of all items were anchored on a 7-point Likert scale ranging from 1 (*very inaccurate*) to 7 (*very accurate*). The alphas were .81 and .85 for ANI and API, respectively.

Psychological well-being. Psychological well-being was assessed by two indicators, namely life satisfaction and subjective happiness. Life satisfaction was measured by the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) and a global life satisfaction question of the Delighted-Terrible Scale (D/T; Andrews and Withey, 1976). Sample items include: "So far I have gotten the important things I want in life" (SWLS) and "How do you feel about your life as a whole these days?" (D/T). Responses for all items were anchored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999) was

used to assess global subjective happiness and well-being. A sample item is "Some

people are generally very happy. They enjoy life regardless of what is going on,

getting the most out of everything. To what extent does this characterization

describe you?" It consists of 4 items on a 7-point Likert scale ranging from 1 (*very*

inaccurate) to 7 (*very accurate*). The alphas were .88 and .87 for life satisfaction

and subjective happiness, respectively.

Self-view. Rosenberg's Self-Esteem Scale (SES; Rosenberg, 1965) was used

to measure one's evaluation of the self. A sample item includes: "I take a positive

attitude toward myself." It consists of 10 items rated on a 4-point Likert scale

ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Its alpha was .86 in this

study.

Results and Discussion

Descriptive statistics, including means, standard deviations, and correlation

coefficients among the measures are presented in Table 1. Correlation analysis

showed that social cynicism was positively correlated with attention to negative

information, $r(394) = .38$, $p < .001$, while negatively correlated with attention to

positive information, $r(394) = -.27$, $p < .001$, and two well-being indicators,

namely life satisfaction, $r(394) = -.25$, $p < .001$, and subjective happiness, $r(394)$

$= -.33$, $p < .001$. In addition, both attention to negative information and attention to

positive information were significantly correlated with two well-being indicators in the expected directions (see Table 1).

As the results of bivariate correlations were consistent with the current hypotheses, regression analysis was performed to test the proposed mediation model. In the following analyses, the outcome variable of psychological well-being was derived by averaging the standardized scores of life satisfaction and subjective happiness. To investigate the variance of psychological well-being uniquely explained by world-view in this study, self-view and demographic variables, such as age and gender, were controlled in all analyses. Following the procedures outlined by Baron and Kenny (1986) and Judd and Kenny (1981), four steps are needed to confirm a mediation effect. First, social cynicism negatively predicted psychological well-being, $R^2 = .02$, $F(1, 389) = 12.21$, $\beta = -.14$, $p = .001$, over and above the influences of self-esteem and demographic information, including age and gender (Table 4, block 2). Second, social cynicism positively predicted attention to negative information, $R^2 = .09$, $F(1, 388) = 46.83$, $\beta = .32$, $p < .001$, and negatively predicted attention to positive information, $R^2 = .04$, $F(1, 388) = 16.67$, $\beta = -.20$, $p < .001$ (Tables 2 and 3, block 2). Third, attention to negative information and attention to positive information significantly predicted psychological well-being, $R^2 = .10$, $F(2, 388) = 43.26$, $\beta = -.23$ and $.34$,

respectively, *ps* < .001 (Table 4, block 3). Fourth, the effect of social cynicism on

psychological well-being became non-significant after adding attention to negative

and positive information as predictors, β = -.03, *p* = .484, (Table 4, block 3), which

revealed a possible full mediation effect. Finally, Sobel test (Sobel, 1982) indicated

that the indirect effects were significant, confirming that social cynicism influenced

psychological well-being through increased attention to negative information, z =

-4.29, *p* < .001, and decreased attention to positive information, z = -3.69, *p* < .001.

Taken together, the present findings were aligned with the hypothesis that attention

to negative and positive information would fully mediate the effect of social

cynicism on psychological well-being.

Regression analysis treats psychological constructs as manifest variables,

which does take measurement error into account. Leaving the measurement error

issues unaddressed may cause problems in the estimation of statistical relationships.

Hence, structural equation modeling (SEM) was utilized to test the mediation

model, treating psychological constructs as latent variables, and accounting for the

measurement error (Iacobucci, Saldanha & Deng, 2007). Parceling was used to

establish the measurement model; items measuring specific constructs were

randomly grouped into three parcels, with two to six items in each parcel (see Little,

Cunningham, Shahar, & Widaman, 2002 for the argument of using item parceling

in structural equation modeling). Assessment of model fit was based on multiple

criteria, including absolute misfit and incremental fit indices. A model with

Root-Mean-Square Errors of Approximation (RMSEA, Steiger & Lind, 1980)

lower than 0.08, Standardized Root Mean Squared Residual (SRMR, Hu & Bentler,

1998) lower than 0.08, and Comparative Fit Index (CFI, Bentler, 1990) greater

than 0.90 was considered as having acceptable fit to the data (Hoyle, 1995).

The mediation model fitted the data well, χ^2 (116) = 300.71, p < .001, CFI

= .94, SRMR = .05, RMSEA = .06. All factor loadings were statistically significant,

β = .59 to .97, ps < .001 (Figure 1). Overall, the SEM results were consistent with

those from regression analyses. On one hand, social cynicism positively predicted

attention to negative information, β = .40, p < .001, 95% CIs [.27, .52], which in

turn negatively predicted psychological well-being, β = -.42, p < .001, 95% CIs

[-.56, -.28]. On the other hand, social cynicism negatively predicted attention to

positive information, β = -.25, p < .001, 95% CIs [-.38, -.13], which in turn

positively predicted psychological well-being, β = .62, p < .001, 95% CIs [.49, .74].

The direct effect of social cynicism on psychological well-being was found to be

non-significant, β = .11, p = .124, 95% CIs [-.03, .25]. Together with the significant

indirect effects through ANI, z = -.32, p <.001, 95% CIs [-.48, -.16], and API, z =

-.30, p = .001, 95% CIs [-.48, -.21], structural equation modeling confirmed that the

effect of social cynicism on psychological well-being were fully mediated by attention to negative and positive information. In addition, the two mediating effects did not significantly differ from each others, $z = -.02$, $p = .857$, 95% CIs [-.25, .20]. Overall, the predictors explained 83% of total variance in psychological well-being, 39% of total variance in attention to negative information and 36% of total variance in attention to positive information.

In general, the findings of Study 1 replicated previous results (Chen et al, 2009; Lai et al., 2007; Leung & Bond, 2004). Individuals endorsing a cynical world-view have poor psychological health. Study 1 also revealed for the first time that the way of processing different information channeled the effect of social cynicism on psychological health. Social cynics, who have been cultivated to stay alert to the external world for prevention of potential harms, exhibit a propensity to pay more attention to negative information and less to positive information. This pattern of handling information may make negative information more prominent and positive information less obvious in one's life, thereby dampening one's psychological health.

Study 2

Although cross-sectional results in Study 1 are adequate for descriptive analysis and able to show associations among the constructs, Study 1 may be confounded by the common method bias and incapable of implying causal directions. It has been suggested that longitudinal design, which creates a temporal separation between predictor and outcome variable, can alleviate the inevitable common method variance problem (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Together with the longitudinal design, stringent modeling procedure, such as cross-lagged panel modeling, can rigorously investigate the causal directions between constructs and simultaneously reduce the influences of common method variance problem. Hence, to provide stronger evidence for the associations identified in Study 1, this study adopted a two-wave longitudinal design to examine three possible relationships among social cynicism, attention to negative and positive information, and psychological well-being: (a) They do not cause each other over time, (b) They have unidirectional influences on each other, and (c) They reciprocally influence each other.

Method

Participants and procedure

The sample consisted of 77 university students (55 females), with a mean age

of 19.21 (*SD* = 2.23). Participants were recruited through mass emailing and were

invited to complete an online questionnaire in Chinese. Approximately three

months after the first session, participants completed the same set of online

questionnaire.

Measures

Validated Chinese versions of all instruments were administered. The same set

of instruments used in Study 1 was adopted in this study, including the cynicism

subscale from the Social Axioms Survey (Leung et al., 2002; α = .88 and .87 for

Time 1 and Time 2, respectively), the Attention to Positive and Negative

Information Scale (Noguchi, Gohm, & Dalsky, 2006; ANI: α = .79 and .86 for

Time 1 and Time 2, respectively; API: α = .91 and .88 for Time 1 and Time 2,

respectively), life satisfaction (Diener et al., 1985; Andrews and Withey, 1976; α

= .89 and .91 for Time 1 and Time 2, respectively), the Subjective Happiness Scale

(Lyubomirsky & Lepper, 1999; α = .88 and .90 for Time 1 and Time 2,

respectively), and Rosenberg's Self-Esteem Scale (Rosenberg, 1965; α = .84

and .86 for Time 1 and Time 2, respectively).

Results and Discussion

Descriptive statistics, including means, standard deviations, and bivariate

correlations of the measures across two time points are summarized in Table 5. It is

worthy to note that the correlations of the measures across the three-month period

were all significant and in moderate level on average, mean $r = .64$, ranging

from .58 to .80, $ps < .001$. These correlations indicated that the relative positions of

these scores were moderately stable over time but still did not completely overlap.

In sum, there were around 36% to 66% of the unexplained variances in these

measures, making the current longitudinal design possible to predict the variations

of changes over time.

    To infer causal relationships within the mediation model, I first inspected the

cross-lagged correlations among the measures across the three-month period.

Social cynicism at Time 1 was significantly correlated with all key variables at

Time 2 in the expected directions, namely attention to negative information, $r (77)$

$= .55$, $p < .001$, attention to positive information, $r (77) = -.32$, $p = .005$, life

satisfaction, $r (77) = -.44$, $p < .001$, and subjective happiness, $r (77) = -.49$, $p < .001$.

Attention to negative information at Time 1 was negatively correlated with life

satisfaction at Time 2, $r (77) = -.46$, $p < .001$, and subjective happiness at Time 2, r

$(77) = -.53$, $p < .001$. Positive correlations were found between attention to positive

information at Time 1 and life satisfaction at Time 2, $r (77) = .45$, $p < .001$, as well

as subjective happiness at Time 2, $r (77) = .59$, $p < .001$. These cross-lagged

correlations revealed that social cynicism may pose lagged effect on attention to

negative information, which in turn prospectively affect psychological well-being.

In response to the critique of cross-lagged correlation (Rogosa, 1980), cross-lagged panel modeling were employed to model the possible causal relationships in a more stringent way, examining whether these constructs uni-directionally or reciprocally influence each other. Aligned with Study 1, age, gender, and self-esteem were controlled in all analyses. Outcome variable of psychological well-being was derived in the same way as in Study 1. As depicted in Figure 3, the cross-lagged panel model fitted the data well, $\chi^2(1) = .107$, $p = .743$, CFI = 1.00, SRMR = .01, RMSEA = .00. Not surprisingly, social cynicism, $\beta = .60$, $p < .001$, 95% CIs [.41, .79], attention to negative information, $\beta = .39$, $p < .001$, 95% CIs [.18, .59], attention to positive information, $\beta = .43$, $p < .001$, 95% CIs [.22, .65], and psychological well-being, $\beta = .41$, $p < .001$, 95% CIs [.23, .59], were positively and significantly predicted by their preceding measures.

Consistent with the results from cross-lagged correlations, three prospective effects have been identified. First, social cynicism positively and significantly predicted attention to negative information over time, $\beta = .33$, $p = .001$, 95% CIs [.13, .52], after controlling the autoregressive effects. Interestingly, this lagged effect of social cynicism was not found in attention to positive information, $\beta = -.03$, $p = .809$, 95% CIs [-.23, .18]. Finally, both attention to negative information,

β = -.24, p = .005, 95% CIs [-.40, -.07], and attention to positive information, β = .23, p = .008, 95% CIs [.06, .39], prospectively predicted psychological well-being.

Testing a longitudinal mediation model requires at least three waves of measurements. The present two-wave longitudinal setting is not the ideal research design to test a prospective mediation effect; however, it could still provide an approximate estimation of the longitudinal indirect effect based on the assumption of stationarity (Cole & Maxwell, 2003). The longitudinal indirect effects were derived from path a and path b; path a refers to the regression coefficient of social cynicism onto attention to negative information/positive information, controlling preceding social cynicism, whereas path b refers to regression coefficient of attention to negative information/positive information onto psychological well-being, controlling preceding attention to negative information/positive information. Consistent with Study 1, the longitudinal indirect effect from social cynicism to psychological well-being through attention to negative information was significant, z = -.18, p =.025, 95% CIs [-.33, -.02]. However, the longitudinal indirect effect through attention to positive information was not significant, z = -.01, p =.809, 95% CIs [-.10, .08], indicating that attention to positive information could not mediate the prospective effect of social cynicism on psychological well-being.

Overall, around 68% of total variance in psychological well-being, 47% of total variance in attention to negative information and 43% of total variance in attention to positive information were explained by their preceding measures and other predictors.

In summary, social cynicism induces changes of attention to negative information, but not for changes of attention to positive information. The information-processing propensity toward negativity exerts effect on changes of psychological well-being. Most importantly, all of these causal predictions do not work in reverse, ascertaining the causal direction within the mediation model identified in Study 1, and ruling out the alternative models. In Studies 1 and 2, attention to positive information concurrently covariated with social cynicism, but was not prospectively predicted by social cynicism. On the other hand, attention to negative information consistently mediated the influence of social cynicism on psychological well-being across the two studies. Therefore, Study 3 further investigates how social cynicism influences psychological well-being in a real-life setting, specifically targeting the memory of negative information.

Study 3

Evidence from cross-sectional (Study 1) and longitudinal studies (Study 2) provided support for the model in which attention to negative information mediates the relationships between social cynicism and psychological well-being. To generalize the current proposition to different kinds of basic cognitive processes, this study targeted at another cognitive process in handling negative information – the memory of negative information. In Studies 1 and 2, a nomothetic approach was used to tap the negative attention, having participants report their cognitive tendencies based on validated instruments. While standardized questionnaires enable all respondents to evaluate themselves on the same statements, some statements may not be especially relevant to certain respondents. Thus, this study adopted an idiographic approach to measuring the memory of negative information (Allport, 1962), having participants disclose and deeply recall a negative experience which happened in the past few days, then asking them to evaluate the vividness of the negative experience recalled. Finally, instead of operationalizing psychological well-being as positive indicators only, three more indicators of psychological distress, namely depression, anxiety, and loneliness, were included to derive a latent concept of psychological well-being. Hence, to maximize the ecological validity and simultaneously minimize the common method bias, this

study adopted a diary design (Nezlek, 2005) with an idiographic approach to testing the proposed mediation model.

Method

Participants and Procedure

A total of 264 university students (195 females; M_{age} = 20.58, SD = 2.37) participated in this study. All participants were invited to take part in the present study through mass emailing. An online survey was used to collect responses in the current study. Participants were assured of confidentiality at the beginning of the study.

This study was divided into two procedural phases: (a) The first day and (b) The remaining 11 days. In total, participants were asked to give responses for twelve days. In the first session, participants completed measures tapping social cynicism and reported their demographic information. About a month after the first session, participants started the second phase of the study. The duration of second phase was about one month. Participants were asked to answer questions for eleven days, with approximately two to three days every week for four consecutive weeks. During these 11 days, participants described a negative experience which happened in the past few days. Then, they were instructed to close their eyes and make a deep recall of the disclosed negative experience. Finally, participants answered three

questions concerning the vividness, intensity, and impact of the recalled negative

experience. On average, participants provided responses for 9.48 days out of the

maximum of eleven days.

Measures

Cynical world-view. This measure was the same as in Studies 1 and 2 (α = .84

in this study).

Memory of negative information. The memory of the recalled negative

experience was evaluated by three self-reported indicators, namely vividness,

intensity, and impact of the recalled events. The items include: "To what extent do

you think the recalled negative experience is vivid?", "To what extent do you think

the recalled negative experience is intense?", and "To what extent do you think the

recalled negative experience has impact on you?". Responses of each item were

anchored on a 7-point Likert scale ranging from 1 (*not at all*) to 6 (*most*). Its alpha

was .87 in this study (internal consistency of memory of negative information was

derived by the composite variable of three indicators, viz., vividness, intensity, and

impact of the recalled events).

Psychological well-being. Psychological well-being was assessed by five

indicators, namely life satisfaction (D/T; Andrews and Withey, 1976), subjective

happiness (SHS; Lyubomirsky & Lepper, 1999, α = .94 in this study), depression,

anxiety, and loneliness. Depression and anxiety were measured by the Depression and Anxiety scales of the Symptom Checklist-90-Revised (Derogatis & Melisaratos, 1983). The Depression scale consists of items measuring the frequency of depressive symptoms (e.g., "feeling sad or depressed"); the Anxiety scale comprises items assessing the frequency of symptoms of anxiety (e.g., "feeling fearful or anxious"). These items were rated on a 4-point Likert scale ranging from 1 (*rarely or never*) to 4 (*most of the time*). The UCLA Loneliness Scale (Hays & DiMatteo, 1987) was adopted to measure the feeling of being cut off or separated and deficient in social contact (e.g., "feeling isolated from others"). The items were rated on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Two items were extracted from each of these three scales as in previous studies (e.g., Chen, Benet-Martínez, & Bond, 2008; Chen, Benet-Martínez, Wu, Lam & Bond, 2013). The alphas were .90, .95 and .88 for depression, anxiety, and loneliness, respectively.

Self-view. This measure was the same as in Studies 1 and 2 ($\alpha = .87$ in this study).

Results and Discussion

Descriptive statistics, including means, standard deviations, intraclass correlations, and bivariate correlations among the measures are presented in Table

6. As hypothesized, social cynicism was positively correlated with three indicators of memory of negative information, namely vividness, r (264) = .17, p = .008, intensity, r (264) = .20, p =.001, and impact, r (264) = .16, p = .005. Three indicators of memory of negative information were significantly correlated with five indicators of psychological well-being in the expected directions (see Table 6). Overall, correlation analysis revealed converging results with Studies 1 and 2. Similar to Study 1, a mediation model was developed to test the current hypothesis that memory of negative information would mediate the effect of social cynicism on psychological well-being.

The present data have a multilevel structure with weekly measures (Level 1 within-person) nested within participants (Level 2 between-person). Intraclass correlation (ICC) is a measure in multilevel setting that describes the proportion of between-group variance compared with total variance in the lower-level variables. An ICC that is larger than zero can have a dramatic effect on Type 1 error rates (Scariano & Davenport, 1987). As shown in Table 6, the ICCs of all the measures were larger than zero and the average ICC was 0.59. In other words, the inter-individual difference (Level 2 between-person), on average, explained about 59% of the total variance in the measures collected in all 11 days throughout the diary study.

In addition, apart from ICC, Muthen and Satorra (1995) recommended that the design effect [1 + (average cluster size − 1)*ICC)] should be considered when evaluating the dependence of data. They regard a design effect of more than two as large effect and multilevel modeling should then be adopted. In the present study, the design effects of all variables exceeded two. Thus, to account for the nested structure, multilevel structural equation modeling was adopted to test the proposed mediation model. Models were fitted with random intercepts and fixed slopes, controlling for age, gender, and self-esteem in all of the following analyses. In the present multilevel model, all lower-level variables were decomposed into two parts of unrelated latent variables: within-level and between-level (Muthén, 1994). Group-mean centering was used in latent within-level variables. Finally, procedures outlined in Preacher, Zyphur, and Zhang (2010) were followed to estimate the indirect effects in multilevel context.

The multilevel mediation model fitted the data well, χ^2 (388) = 951.370, p < .001, CFI = .91, SRMR = .01 (Within) and .07 (Between), RMSEA = .02 (Figure 4 and Table 7). All factor loadings and residual variance were statistically significant except the residual variance of the perceived intensity in the between-person part. That parameter's error variance was then fixed to zero (Hox, 2002; see also Muthén & Asparouhov, 2011). Overall, findings were consistent

with Studies 1 and 2. At the within-person level, memory of negative information

negatively predicted psychological well-being, $\beta = -.18$, $p < .001$, 95% CIs [-.26,

-.10]. At the between-person level, social cynicism positively predicted memory of

negative information, $\beta = .23$, $p = .003$, 95% CIs [.08, .38], which in turn

negatively predicted psychological well-being, $\beta = -.28$, $p < .001$, 95% CIs

[.17, .39]. The indirect effect of social cynicism on psychological well-being

through memory of negative information was significant, $z = -.07$, $p = .015$, 95%

CIs [-.12, -.01], whereas the direct effect of social cynicism on psychological

well-being was not significant, $\beta = -.11$, $p = .098$, 95% CIs [.02, -.24]. These

findings indicated a full mediation effect at the between-person level. Overall, the

predictors at the between-person level explained 47% of total variance in

psychological well-being and 10% of total variance in memory of negative

information.

The findings of Study 3 indicated that social cynicism could influence our

memory system, shaping the way to recall negative information. Apart from being

attentive to negative information, social cynics who are vigilant to potential threats

and dangers recall negative information with more vividness, intensity and impact

than individuals with lower levels of social cynicism. The increased vividness of

negative memory may then make individuals more susceptible to re-experience to

negative events, thereby lowering their psychological well-being.

General Discussion

The role of cognition, especially self-view, in psychological heath has been well studied (Diener & Diener, 1995; Lai et al, 2007; Ye et al., 2012). Since the development of the social axioms construct (Leung & Bond, 2004), the predictive power of world-views on psychological well-being has attracted increasing attention. The present research aimed at advancing our understanding of the process in which beliefs affect psychological health by unpacking the association between world-views and psychological well-being. Among the five social axioms, the factor of social cynicism was selected, given the well-documented impact on different well-being indicators (Chen et al, 2009; Dinca & Iliescu, 2009; Lai et al., 2007; Leung & Bond, 2004; Lo, 2006; Neto, 2006).

Based on the social schema theory and heightened attention hypothesis, basic cognitive processes were hypothesized to mediate the effect of social cynicism on psychological well-being. Three studies with multiple methods were conducted. In the main, social cynicism imposed negative influence on psychological well-being over and above the effect of self-esteem in all of the studies. Across three studies, I found that social cynicism predisposed people to attend more to negative information (Studies 1 and 2) and recalled negative information with more vividness, intensity, and impact (Study 3). These findings suggest that social cynics

may be more prone to protect themselves from potential harm by encoding and storing possibly threatening materials. In contrast, there were no systematic findings regarding the association between one's endorsement of social cynicism and information-processing propensity toward positive information. More importantly, two hypotheses were supported. The current research indicated that social cynicism worked through information-processing propensity toward negativity, such as enhanced attention and vivid memory, to affect psychological well-being. These mediating effects were confirmed using different research designs (cross-sectional and longitudinal) along with different measurement approaches (nomothetic and idiographic).

Negative Information versus Positive Information

Attention to and memory of negative information mediate the effect of social cynicism on psychological well-being. However, this mediating effect is not consistently found when participants process positive information. Study 1 using cross-sectional design finds that social cynicism is concurrently associated with decreased attention to positive information, whereas the prospective prediction does not reach significance in Study 2 using longitudinal design. The differential patterns across cross-sectional and longitudinal design indicate that attention to positive information covariates with social cynicism, but is not affected by social

cynicism. Some third variables not included in this model may account for the

covariation between social cynicism and attention to positive information in the

cross-sectional study. For instance, the personality trait of extraversion is

negatively associated with social cynicism across cultures (Chen, et al., 2006c;

Leung et al., 2012) and influences positive information-processing (Gomez, Gomez,

Cooper, 2002; & Rafienia, Azadfallah, Fathi-Ashtiani, & Rasoulzadeh-Tabatabaiei,

2008). Therefore, extraversion, but not social cynicism, accounts for the changes of

attention to positive information; this explains the reason that the findings of

concurrent association but not prospective association could be found in the present

research.

In fact, the mediating effect of information-processing propensity toward

negative information but not positive information are consistent with the notion

that positivity and negativity are not necessarily aligned with each other. Cacioppo

and colleagues proposed the model of evaluative space, arguing that positive and

negative substrates are separable and underlined by a bivariate structure (Cacioppo

& Berntson, 1994; Cacioppo, Gardner, & Berntson. 1997; Ito, Larsen, Smith &

Cacioppo, 1998). As such, positivity and negativity should be best viewed within a

multidimensional bivariate space rather than a single bipolar continuum.

Accordingly, social cynics pay attention to negative information, but they do not

necessarily reduce their attention to positive information.

The nature of different information valence also explains the differential patterns of mediating effects of positive and negative information. Peeters and his colleagues (e.g., Lewick, Czapinski & Peeters, 1992; Peeters, 1971, 1989; Peeters & Czapinski, 1990) pinpointed that negative information is much rarer than positive information, and it makes positive information become greater in frequency but lesser in urgency. Conversely, negative information is considered to be more diagnostic than neutral and positive information in general (Skowronski & Carlston, 1989). A good person has to keep doing good to maintain the "good" trait, while a bad person just needs to do something bad on some occasions. The connection between negative behaviors and negative traits is much stronger than the connection between positive behaviors and positive traits. Therefore, knowing someone's negative characteristics is always more informative and diagnostic in impression formation than knowing positive information. When social cynicism emphasizes survival in a world that lacks trust, detecting deception becomes important and social cynics are motivated to make use of different cues for impression management. These cues in turn help social cynics to form impression of certain people, groups and institutions, so that they are able to stay away from potential threats. As in the present research, social cynics elevate their attention to

negative information that helps to discover the essence of different people, groups, and institutions. Due to less urgent and diagnostic nature in positive information, social cynics may not actively attempt to reduce their attention to positive information because they may realize that positive information contributes little to forming impression of other people.

Considering the present predictive framework, social cynics seem to regard negative information as more crucial than positive information when they need to form impressions of other people. This positive-negative asymmetry has been termed as negativity bias; it has been defined as the tendency to weigh negative information, events, or emotions more than positive (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001; Peeters & Czapinski, 1990; Skowronski & Carlston, 1989). Negativity bias has been documented extensively in the literature across different domains, including attention (Oehman, Lundqvist, & Esteves, 2001; Pratto & John, 1991), emotion (Baumeister, Heatherton, & Tice, 1994; Esses & Zanna, 1995), decision-making (Kahneman & Tversky, 1984; Peeters & Czapinski, 1990), and impression judgment (Abelson & Kanouse, 1966; Fiske & Taylor, 1991; Kanouse & Hanson, 1972). Researchers suggested that human beings have a general tendency for negativity bias (Baumeister et al., 2001; Rozin & Royzman, 2001); they consider negative information as more important

than positive information. The present research found that if people possess a higher level of social cynicism, they attend more to negative information. Therefore, although the present study did not compare attention to negative information and positive information directly since the instruments are not in equivalent metric, social cynics seem to display more negativity bias than people with low social cynicism. Future research can further investigate this proposition.

World-view and Self-view

Cynical world-view exerts negative impact on psychological health in addition to self-view. More vitally, this unique prediction of cynical world-view on psychological well-being is channeled through the attention to and memory of negative information. However, if world-view is conceptualized as a schema to filter the perception about the social world, is self-view also regarded as having the same function to filter the perception about oneself? If it is, do attention to and memory of negative information mediate the effect of self-view on psychological well-being? Additional analyses have been performed in Study 2 to examine this possibility. The cross-lagged panel model highlighted that self-esteem could neither prospectively predict attention to negative information, $\beta = -.02$, $p = .853$, 95% CIs [-.24, .20], nor attention to positive information, $\beta = .06$, $p = .617$, 95% CIs [-.17, .35], while controlling the effect of social cynicism and the

autoregressive effects. In addition, the longitudinal indirect effect from self-esteem to psychological well-being through attention to negative information, $z = -.02$, $p =.761$, 95% CIs [-.16, .12], and attention to positive information, $z = .02$, $p =.831$, 95% CIs [-.13, .16], were not significant. Moreover, auxiliary analyses in Study 3 showed that self-esteem could not predict the memory of negative information beyond social cynicism, $\beta = -.14$, $p = .104$, 95% CIs [-.30, .03]. The indirect effect from self-esteem to psychological well-being through memory of negative information was non-significant, $z = .05$, $p =.147$, 95% CIs [.11, -.02]. Altogether, the additional analyses indicate that self-esteem does not predict attention to and memory of negative information, resulting in non-significant mediating effects.

The non-significant paths between self-esteem and the tendencies to focus on and recall negative information might be due to the nature of cognitive tendencies measured in the current study. Kurman (2011) conducted a study to investigate the unique predictions of social axioms and self-characteristics on behaviors. It has been demonstrated that social cynicism uniquely predicted other-directed behaviors, whereas personal cynicism uniquely predicted self-directed behaviors. In Study 2 of the present research, the standardized instrument tapping the cognitive tendency aims to measure the attention to negative information in general. However, taking a close inspection of those items, seven of the eleven items ask about attention to

others' negative information, making this cognitive processing more other-directed

(e.g., "I am quick to notice other people's faults" and "I am particularly aware of

the bad news that appears in TV news broadcasts"). Additionally, in Study 3, most

of the negative experiences disclosed by the participants were about others'

negative behaviors happening in their social groups. Both measures of attention to

and memory of negative information appear to be directed to others. Perhaps, this

could be the reason that cynical world-view, but not self-view, filters the attention

to and memory of negative information.

The differential prediction of world-view and self-view may be explained by

cultural differences in individualism and collectivism, which are extensively

researched in the domains of cognition, attitude, and behavior. Individualists tend

to emphasize their personal attributes, separate themselves from others and

prioritize personal goals over collective goals (e.g., Markus & Kitayama, 1991). In

contrast, collectivists perceive themselves as interconnected with their social

groups and regard social relationships and social norms as more important than

their personal goals. For members of collectivistic cultures, their cognitions,

attitudes, and behaviors are guided more by the perception of social environment,

such as world-view and less influenced by personal attributes, such as self-view

(Diener & Diener, 1995; Hooft, Born, Taris & Flier, 2006; Suh, 2000). In the

similar vein, for the Hong Kong Chinese participants in the present research, who are characterized as collectivists, their information-processing propensity toward negativity should be driven more by cynical world-view than self-view. The present samples are from one culture only, which restricted the testing of this cultural explanation. Hence, it is suggested that the distinction between world-view and self-view can be further examined in terms of their predictability through cross-cultural comparisons.

Apart from the differential prediction of world-view and self-view across cultures, the effects of cognitive processing of negative information on psychological well-being might vary as a function of acceptance of negative information. individuals' levels of dialectical thinking may capture ones' tolerance and acceptance of negative information, which in turn influences the strength if cognitive processing on psychological well-being.

Dialectical thinking encompasses three principles, viz., contradiction, change, and holism (Peng and Nisbett, 1999). The view of contradiction denotes the belief that two ostensibly opposite propositions can both be true and coexist. The theory of change indicates that everything in the universe is constantly changing and unpredictable. The view of holism implies that everything in the universe is interconnected with each other, such that every single element in the world cannot

be understood without reference to the whole. Overall, dialectical thinking refers to

the tolerance of contradictions, ambiguities, and inconsistencies.

The prevalence of dialectical thinking differs across Eastern and Western

cultures (Spencer-Rodgers, Williams, & Peng, 2010). In general, East Asians are

more willing to accept the contrary views of self and others compared to

Westerners. For instance, Chinese have an increased tendency to describe both

positive and negative aspects of the self compared to European Americans

(Boucher, Peng, Shi & Wang, 2009; Spencer- Rodgers, Peng, Wang, & Hou, 2004).

Chinese respondents report more balance in positive and negative mood than

English respondents (Ross, Xun and Wilson, 2002). More importantly, biculturals

primed with high dialectical thinking have higher negative self-conceptions and

comparable positive self-views than individuals primed with low dialectical

thinking (Boucher and O'Dowd, 2011). These findings indicated that East Asians

who endorse higher dialectical thinking are more likely to accept not only positive

information, but also negative information than Westerners with relatively low

levels of dialectical thinking. This tendency to comfortably acknowledge negative

aspects of themselves and the external social world may weaken the effects of

cognitive processing of negative information. Individuals with high dialectical

thinking should be more accustomed to the negative information and regard them

as usual and normal in one's life, thereby reducing the influence of negative

information on mental health. Thus, I suggest that the linkage between cognitive

processing of negative information and psychological well-being may be weaker in

Chinese culture with relatively high dialectical thinking than in Western cultures.

Significance, Limitations, and Future Directions

The current research proposed and identified a process model to address a

conceptual question of how social cynicism influences psychological well-being.

First, the present research used a longitudinal design to replicate the findings of

previous cross-sectional studies (Chen et al., 2006b) and found that cynical

world-view uniquely predicted psychological well-being beyond the effect of

self-view. Second, the first two studies (Studies 1 and 2) extended prior research

(Lai et al., 2007; Leung et al., 2010) and revealed that the increased attention to

negative information mediated the effect of social cynicism on psychological

well-being; this underlying mechanism has been confirmed by both cross-sectional

and longitudinal results. Third, Study 3 further tested another mechanism, the

memory of negative information, and support has been obtained using idiographic

approach. Overall, the present research contributes to the conceptualization of how

social cynicism functions, especially in the context of psychological health. This

research provides support to the survival motive embedded in the belief of social

cynicism and shows that social cynics may regard negative information, but not positive information, as very important in impression formation. This research suggests that this negative-positive asymmetry may serve as a benchmark of social cynicism, calling for further examination of negativity bias among social cynics. Furthermore, these findings shed light on the distinction between self-view and world-view in terms of their predictive validity (Kurman, 2011). It is suggested that cultural differences in self-construals and thinking style may expand this distinction and further cross-cultural comparisons can be conducted to validate the cultural explanations.

Before concluding, four caveats for this research and future directions should be noted. First, the current measurement used to tap the cognitive processes mixes the information about self and others. As demonstrated by a previous study (Kurman, 2011), world-views and self-views uniquely predicted other-directed and self-directed behaviors, respectively. The mixed measure may confound the predictions of social cynicism; it is theoretically possible that only information about others, but not information about oneself, mediates the effect of social cynicism on psychological well-being. Future studies should adopt other instruments separately tapping cognitive processing of others' and self information to rule out the confounding effects.

Second, all of the measurement tools used in the present study were self-rated. Social desirability effect has been well-documented in self-report measures (Arnold & Feldman, 1981). It is relevant to the current research because the tendencies to focus on and recall negative information may be undesirable to most people. Further studies can be conducted using behavioral manipulation, behavioral measures and implicit measures, maximizing the accuracy of measurement tools (Cook & Campbell, 1979). For instance, studies can adopt priming techniques to manipulate cynical world-view, employ eye-tracking device to record visual fixation on different information, and use implicit association tests to examine well-being.

Third, the longitudinal effect of social cynicism on attention and memory came from a two-wave study with relatively short time-lag. It would be more convincing to conduct a longitudinal study with at least three waves, so as to test a more long-term effect of social cynicism and estimate the boundaries of this longitudinal effect by comparing different time-lags. Finally, the present research is correlational in nature. Further studies should use experimental design to test whether the association identified in current cross-sectional and longitudinal settings still holds, so that causal directions can be confirmed.

Conclusion

To conclude, this study adds values to the existing literature in social axioms (Leung et al., 2011) and provides an important first step to investigate how social axioms function. The findings across three studies support that the information-processing propensity toward negative information mediates the relation between social cynicism and psychological well-being. Self-view and cognitive processing of positive information play a less important role in this predictive framework. After identifying the main effects and mediating effects of social axioms, perhaps, it is time to go beyond *what* and *how* social axioms predict and move forward to *when* social axioms predict.

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Table 1

Means, Standard Deviations, and Intercorrelations for the Measures in Study 1 (N = 394)

	M	*SD*	2	3	4	5
1. SCYN	3.07	0.41	.38***	-.27***	-.25***	-.33***
2. ANI	3.52	0.50	-	-.11***	-.28***	-.47***
3. API	3.76	0.47	-	-	.47***	.50***
4. LS	4.36	1.11	-	-	-	.58***
5. SHS	4.49	1.21	-	-	-	-

Note. SCYN = Social cynicism; ANI = Attention to negative information; API = Attention to positive information; LS = Life satisfaction; SHS = Subjective happiness.

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

Table 2

Hierarchical Regression Analysis Predicting Attention to Negative Information in Study 1 (N = 394)

Variable	Attention to Negative Information	
	Block 1	Block 2
	β	β
Age	- .06	- .10*
Gender	.10*	.06
Self-esteem	- .47***	- .40***
Attention to positive information	.13*	.18***
Social Cynicism		.32***
R^2	.20	.29
df	4/389	1/388
F change	24.22***	46.83***

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

Table 3

Hierarchical Regression Analysis Predicting Attention to Positive Information in Study 1 (N = 394)

Variable	Attention to Positive Information	
	Block 1	Block 2
	β	β
Age	.06	.08
Gender	- .14**	- .12**
Self-esteem	.49***	.46***
Attention to negative information	.12*	.18***
Social Cynicism		- .20***
R^2	.23	.27
df	4/389	1/388
F change	29.65***	16.67***

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

Table 4

Hierarchical Multiple Regression Analysis Predicting Psychological Well-Being in Study 1 (N = 394)

Variable	Psychological well-being		
	Block 1	Block 2	Block 3
	β	β	β
Age	- .03	- .02	- .06
Gender	- .19***	- .17***	- .13***
Self-esteem	.60***	.56***	.35***
Social Cynicism		- .14**	- .03
Attention to negative information			- .23***
Attention to positive information			.34***
R^2	.41	.43	.53
df	3/390	1/389	2/387
F change	90.90***	12.21**	43.26***

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

Table 5

Means, Standard Deviations, and Intercorrelations for the Measures in Study 2 (N = 77)

	M	*SD*	2	3	4	5	6	7	8	9	10
1. T1 SCYN	2.93	0.55	.48***	-.35**	-.33**	-.39**	.60***	.55***	-.32**	-.44***	-.49***
2. T1 ANI	3.34	0.46	-	-.10	-.43***	-.42***	.28*	.61***	-.24*	-.46***	-.53***
3. T1 API	4.03	0.48	-	-	.34**	.62***	-.18	-.15	.58***	.45***	.59***
4. T1 LS	4.73	1.13	-	-	-	.57***	-.21†	-.37**	.28*	.60***	.50***
5. T1 SHS	5.14	1.17	-	-	-	-	-.20†	-.38**	.53***	.54***	.80***
6. T2 SCYN	2.94	0.51	-	-	-	-	-	.58***	-.24*	-.32**	-.31**
7. T2 ANI	3.43	0.53	-	-	-	-	-	-	-.23*	-.47***	-.55***
8. T2 API	3.87	0.47	-	-	-	-	-	-	-	.51***	.58***
9. T2 LS	4.70	1.12	-	-	-	-	-	-	-	-	.72***
10. T2 SHS	5.00	1.27	-	-	-	-	-	-	-	-	-

Note. SCYN = Social cynicism; ANI = Attention to negative information; API = Attention to positive information; LS = Life satisfaction; SHS = Subjective happiness.

† *p* < .10. **p* < .05.   ***p* < .01. ****p* < .001.

Table 6

Means, Standard Deviations, Intraclass Correlation, Intercorrelations for the Measures in Study 3 (N = 264)

	M	*SD*	*ICC*	2	3	4	5	6	7	8	9
1. SCYN	3.05	0.47	-	.17**	.20**	.16**	-.22***	-.26***	.30***	.31***	.36***
2. VIVID	4.16	0.64	.30	-	.67***	.55***	-.21**	-.27***	.25***	.24***	.22***
3. INT	3.74	0.75	.29	-	-	.84***	-.25***	-.30***	.38***	.33***	.29***
4. IMP	3.58	0.76	.26	-	-	-	-.24***	-.28***	.37***	.33***	.31***
5. LS	4.65	1.00	.83	-	-	-	-	.71***	-.56***	-.50***	-.52***
6. SHS	4.51	1.14	.90	-	-	-	-	-	-.63***	-.60***	-.62***
7. DEP	1.95	0.56	.72	-	-	-	-	-	-	.90***	.85***
8. ANX	2.04	0.59	.72	-	-	-	-	-	-	-	.81***
9. LONE	1.93	0.57	.73	-	-	-	-	-	-	-	-

Note. SCYN = Social cynicism; VIVID = Vividness; INT = Intensity; IMP = Impact; LS = Life satisfaction; SHS = Subjective happiness; DEP = Depression; ANX = Anxiety; LONE = Loneliness.

Means, standard deviations and bivariate correlations were computed by the average scores of the measures across 11 days.

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

Table 7

Results of Multilevel Modeling Predicting Memory of Negative Experiences and Psychological Well-being in Study 3 (N = 264)

	Memory of negative experiences	Psychological well-being
Intercepts		
Vividness	7.95***	
Intensity	6.30***	
Impact	5.84***	
Life satisfaction		2.75***
Subjective happiness		1.80**
Anxiety		6.71***
Depression		6.56***
Loneliness		6.30***
Level 1 variables		
Daily Memory of negative experiences		.18***
Level 1 residual variance		.97***
Level 2 variables		
Social cynicism	.23**	.11
Mean Memory of negative experiences		.28***
Level 2 residual variance	.90***	.53***

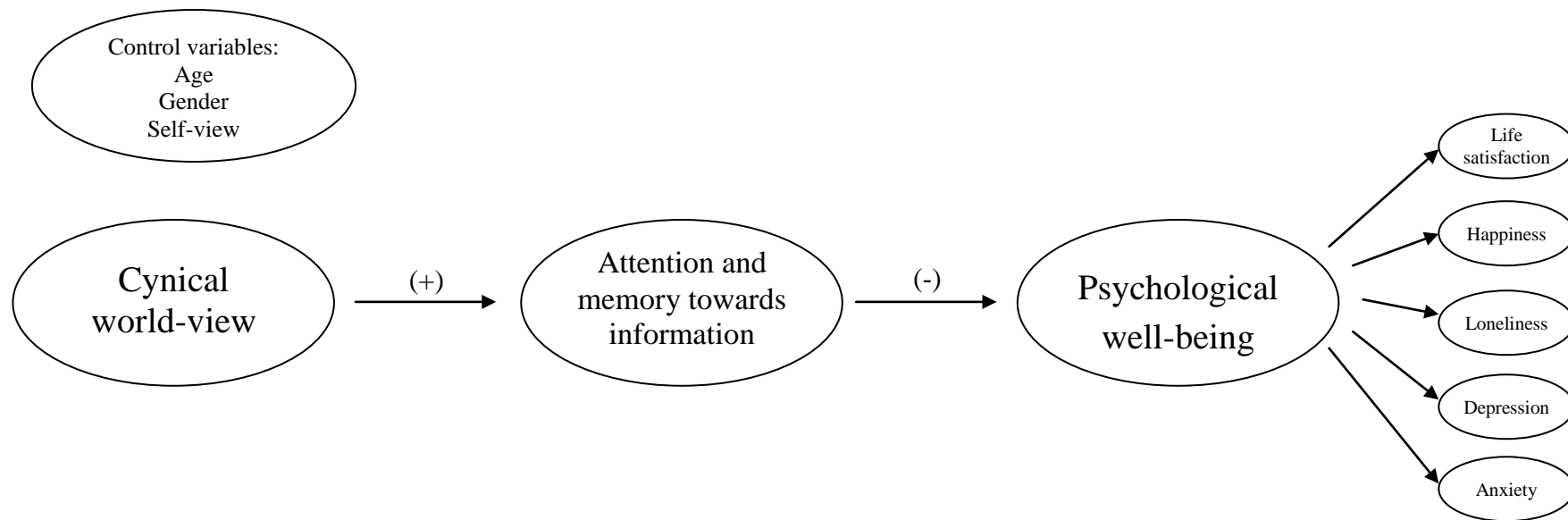*p < .05.   **p < .01. ***p < .001.
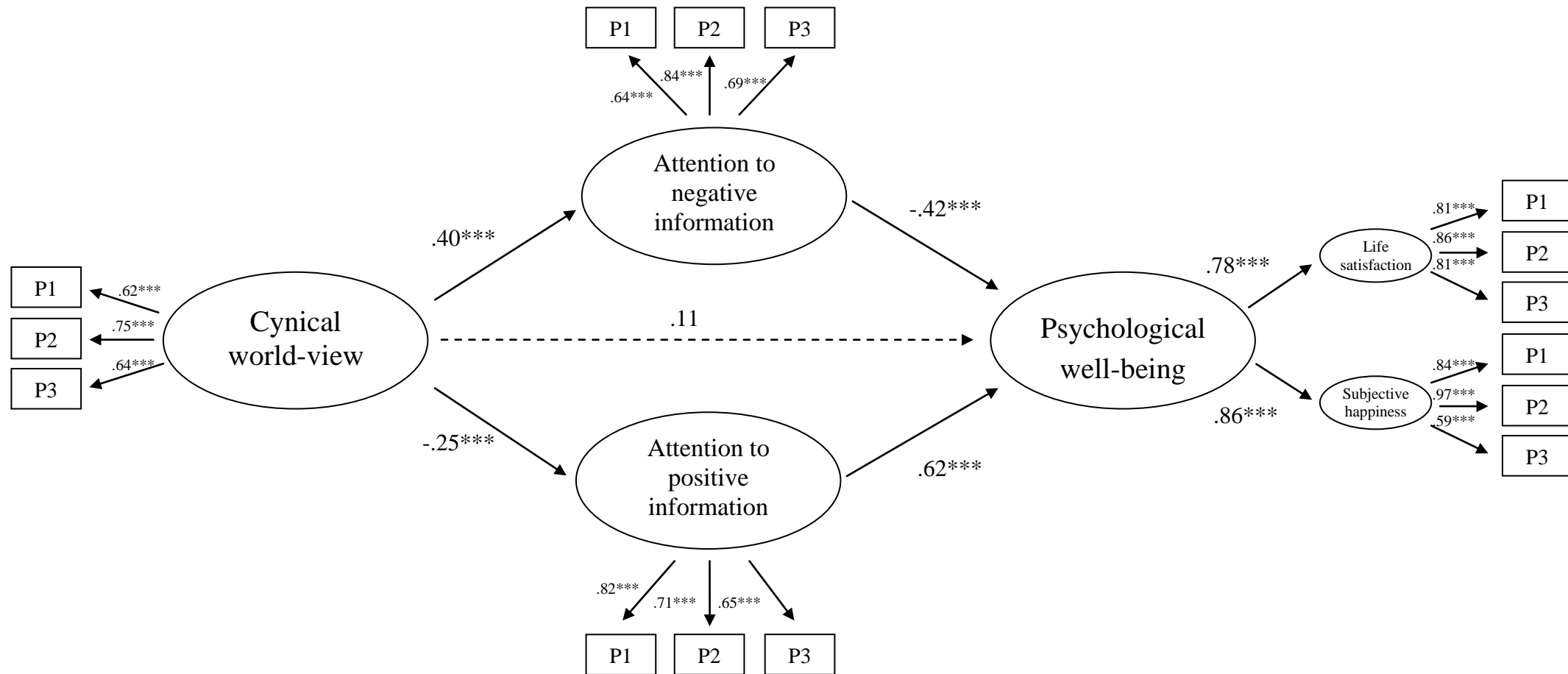

Figure 1. Hypothesized mediation model.

Figure 2. Structural equation model testing mediating effects of attention to negative and positive information on the relation between cynical world-view and psychological well-being.

Note. Results were controlled for age, gender and self-esteem

Dashed lines represent non-significant relationships (*ps > .05*).

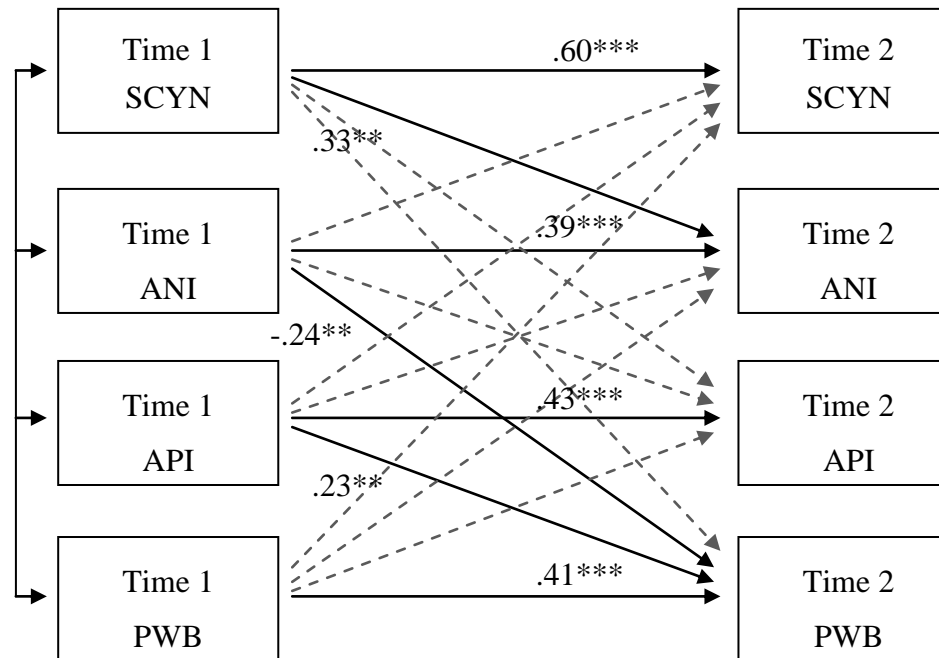*p* < .05.   **p* < .01. ***p* < .001.

Figure 3. Cross-lagged panel model testing prospective effects across 3-month period.

SCYN = Social cynicism; ANI = Attention to negative information; API = Attention to positive information; PWB = Psychological well-being.

Note. Results were controlled for age, gender and self-esteem

Dashed lines represent non-significant relationships (*ps* > .05).

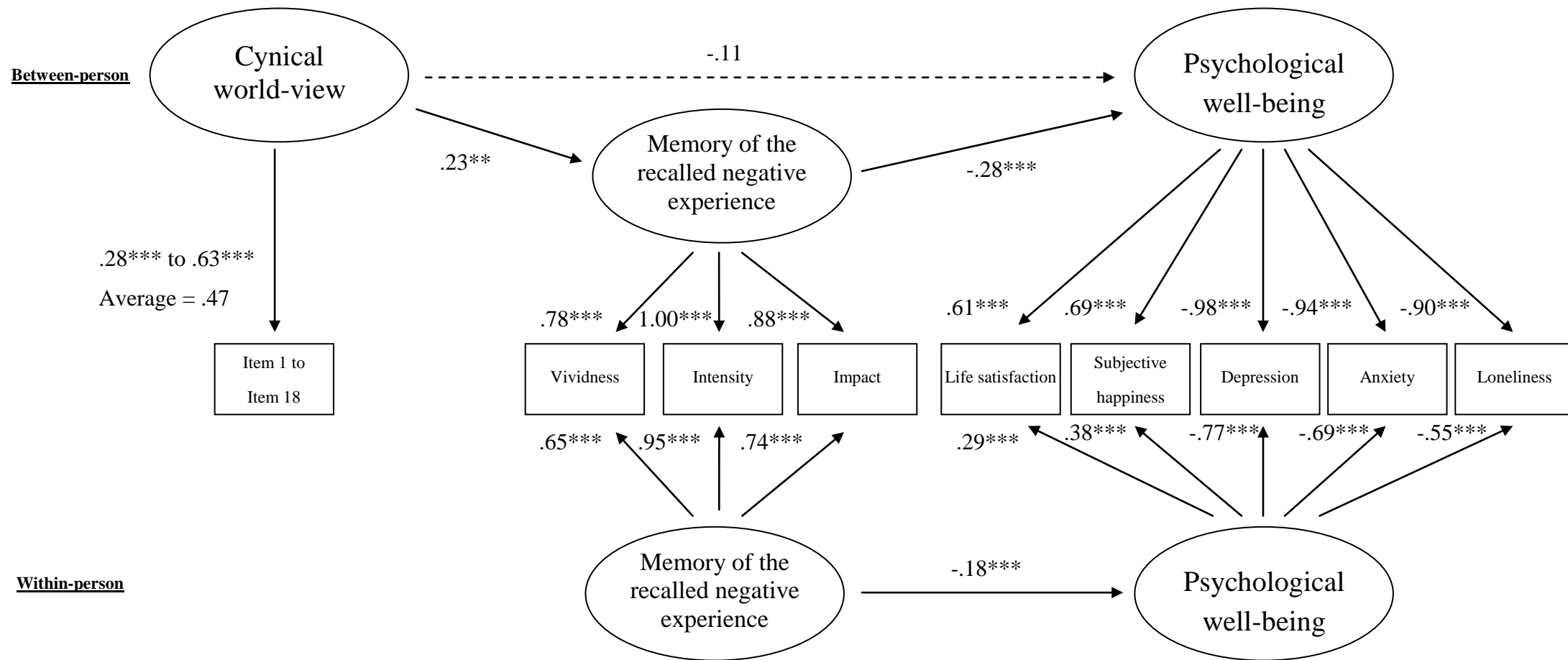*p < .05.   **p < .01. ***p < .001.

Figure 4. Multilevel model testing mediating effect of memory for negative information on the relation between cynical world-view and psychological well-being.

Note. Results were controlled for age, gender and self-esteem

Dashed lines represent non-significant relationships (*ps* > .05).

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