



Belief in a just world and well-being: A daily diary perspective

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ABSTRACT

A large body of research has examined the relationship between belief in a just world (BJW) and well-being. However, this research, and work on BJW more broadly, has predominantly employed experimental and cross-sectional methods, which may not adequately capture how BJW functions in daily life. To help address this, we considered how two forms of BJW—believing the world is just for the self (personal-BJW) and just for others (general-BJW)—relate to various aspects of well-being between persons in a cross-sectional study ($N = 512$) and, critically, within persons in a 2-week naturalistic daily diary study ($N = 132$; 1439 daily reports). Results revealed that both personal- and general-BJW varied between- and within-individuals. Moreover, personal-BJW was not only more robustly related to greater well-being than general-BJW at the between-person level, consistent with prior work, but also at the within-person level. Overall, our diary findings suggest that BJW fluctuates in daily life and that these fluctuations covary positively with well-being.

1. Introduction

Research on the belief in a just world (BJW)—the extent to which one believes that the world is a fair place where people get what they deserve and deserve what they get—has made great strides in elucidating how individual perceptions of justice shape human functioning. Work in this area has primarily relied on experimental and cross-sectional methods (for reviews, see Bartholomaeus & Strelan, 2019; Ellard et al., 2016; Hafer & Bègue, 2005; Hafer & Sutton, 2016). Although highly informative, the results from these studies may not fully speak to how BJW operates in daily life. It seems reasonable to conceive of BJW as a dynamic daily state, one that fluctuates within persons over time. Indeed, BJW may vary from one day to the next depending on personal or vicarious experiences of perceived (in)justice. These fluctuations may co-occur with a variety of internal states that have been of interest to BJW researchers for decades. Yet, no study, to the best of our knowledge, has examined BJW in this manner. In the present research, we aimed to help address this gap by employing naturalistic daily diary methodology to examine daily relationships between BJW and well-being.

1.1. Two Conceptualizations of BJW

Based on earlier experiments (e.g., Lerner & Simmons, 1966), Lerner

and colleagues (e.g., 1980; Lerner et al., 1976) developed just world theory, which gave rise to two interpretations of BJW. The first reflects Lerner's original conceptualization of BJW as a near-universal implicit motivation that emerges as part of normal human development. To elaborate, according to just world theory, virtually all people form a “personal contract” with the world during childhood, which specifies that one should forgo immediate gratification in favour of the pursuit of longer-term rewards. In return, one may reasonably expect that investing time and effort into achieving a goal will usually yield the desired outcome. In order to maintain this contract, people develop a motive or need to believe that the world is a just place in which people get what they deserve and deserve what they get. Evidence to the contrary is threatening, and people will subsequently attempt to restore justice using a variety of strategies, such as rationalizing a victim's unjust fate as deserved by blaming them for their plight (for a review, see Hafer & Rubel, 2015). Given its implicit nature, it was recommended that experiments were the best way to study BJW (e.g., Lerner, 1980) because they allow relevant situational factors to be varied and responses observed in ways that participants are unlikely to recognize consciously as BJW themes. As such, a large literature primarily examining responses to experimental manipulations of just world threats has since emerged (for reviews, see Ellard et al., 2016; Hafer & Bègue, 2005).

BJW has also been conceptualized as a trait that can be measured explicitly via self-report scales (for a review see, Hafer & Sutton, 2016;

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see also Rubin & Peplau, 1973, 1975). Although inspired by just world theory, this view represents a departure from Lerner's original thinking, as BJW is not considered to be an implicit motivation or need common to almost all people, but rather an explicit dispositional belief that varies between people. Individual differences in the strength of people's explicitly endorsed BJW have been attributed to a host of factors, such as socialization and one's knowledge and personal experience of (in)justice (e.g., Hafer & Bègue, 2005; Hafer & Sutton, 2016). Within the individual difference approach, researchers often differentiate between the extent to which one believes that the world is just for the self (personal-BJW) and just for others (general-BJW; Dalbert, 1999; Lipkus et al., 1996). A moderate to strong positive association is often observed between these two beliefs. For instance, a recent meta-analysis reported a correlation of $r = .52$ between Dalbert's (1999) personal and general scales (Hafer et al., 2020), suggesting that people may take both spheres of BJW into account when choosing their responses to scale items (see also Bartholomaeus, Burns, & Strelan, 2023). The predominant and most frequently advocated strategy for addressing this is to control for their shared variance when examining their relationships with relevant criteria (e.g., Bartholomaeus, Burns, & Strelan, 2023; Chobthamkit et al., 2022; Hafer & Sutton, 2016; Sutton et al., 2017; but see Hafer et al., 2020 for an alternative strategy), an approach we employ in the present work. A large body of research has found that the strength and/or direction of their relationships with various outcomes tend to differ, with and without accounting for each dimension. For example, with respect to other-oriented outcomes, personal-BJW is often linked to a greater prosocial orientation (e.g., more prosocial behavior), whereas general-BJW is often linked to a more harsh and punitive social orientation (e.g., engagement in victim blaming; Bartholomaeus & Strelan, 2019; Hafer & Sutton, 2016). In the next section, we discuss their differential relationships with well-being, a key self-oriented outcome.

Taking a step back, it may initially seem that implicit and explicit conceptualizations of BJW are at odds with one another. However, research has increasingly moved toward greater integration rather than divergence. For instance, experimental BJW manipulations, which are considered the most appropriate way to study implicit BJW (e.g., Lerner, 1980), have also been shown to affect explicit self-report measures of BJW (e.g., Bartholomaeus, Burns, & Strelan, 2023; Igou et al., 2021; Schmitt et al., 2023). A closer look at the experimental work in this field reveals a strong focus on studying how participants react to the unjust fate of others (Ellard et al., 2016; Hafer & Bègue, 2005), which could be considered manipulations of general-BJW (e.g., Bartholomaeus & Strelan, 2019). Likewise, experiments that aim to influence the notion that the world is just for the self could also be viewed as manipulations of personal-BJW, though such experiments are less common (see Bartholomaeus & Strelan, 2019 for a discussion; see also Bartholomaeus, Burns, & Strelan, 2023; Schmitt et al., 2023).

1.2. BJW and Well-Being

BJW is often regarded as a crucial personal resource that helps sustain well-being (e.g., Bartholomaeus & Strelan, 2019; Dalbert, 2001). Several functions appear to help facilitate this process. Broadly speaking, BJW is considered adaptive because it affords a sense that the world is stable, orderly, and thus understandable (Lerner, 1980). Further, as noted earlier, it encourages investment in long-term goals, especially through just means (e.g., Hafer & Rubel, 2015; Lerner, 1980). Dalbert (2001) also suggested that BJW helps people cognitively assimilate unfair events (e.g., via rationalization), compels them to behave in a just manner, and fosters trust in the fairness of others and one's own fate. Other notable functions include fostering a sense of empowerment (e.g., Bartholomaeus, Burns, & Strelan, 2023; Bartholomaeus, Strelan, & Burns, 2023), purpose in life (Hafer & Rubel, 2015), as well as control, optimism, and gratitude (for a joint investigation of these latter three, see Goodwin & Williams, 2023). These various functions are not mutually exclusive. For example, many seem to intersect

with common factors that are conducive to well-being, such as goal pursuit (e.g., Klug & Maier, 2015), or reflect well-being indicators themselves (e.g., a sense of comprehensibility and purpose, and therefore meaning in life; George & Park, 2016).

Of note, many of these functions seem to be more relevant to personal- than general-BJW (e.g., Bartholomaeus & Strelan, 2019; Dalbert, 2001; Goodwin & Williams, 2023). This may help to explain why personal-BJW seems to be more associated with greater well-being than general-BJW. Indeed, many cross-sectional studies have pointed to a trend in which personal-BJW often shows stronger and more consistent positive relationships with various well-being indicators (e.g., life satisfaction, positive affect balance, self-esteem, broad well-being measures), regardless of whether both forms are accounted for (e.g., Dalbert, 1999; Chobthamkit et al., 2022; Correia & Dalbert, 2007; Goodwin & Williams, 2023; Lipkus et al., 1996; Sutton et al., 2017).

Experiments and longitudinal studies over different timespans probing the causal direction of the BJW-well-being link have found some support for effects in both directions, particularly in experiments (Bartholomaeus, Burns, & Strelan, 2023; Bartholomaeus, Strelan, & Burns, 2023; Correia et al., 2009; Igou et al., 2021; Otto et al., 2009; Schmitt et al., 2023). However, it is important to note that there are challenges in disentangling the effects of personal- and general-BJW in experimental settings (see next section; Bartholomaeus, Burns, & Strelan, 2023; Schmitt et al., 2023), as well as in longitudinal studies in which only one sphere is included (e.g., Otto et al., 2009).

1.3. Benefits of a Daily Diary Approach

The aforementioned work, and research in this area more broadly, has primarily relied on experimental and cross-sectional methods. Although valuable, such methods can have notable limitations. To begin, people are sensitive to evidence that threatens or affirms the notion that the world is a just place (e.g., Bartholomaeus, Burns, & Strelan, 2023; Dalbert, 2001; Lerner et al., 1976; Schmitt et al., 2023). However, in BJW experiments, determining how well the scenarios created by researchers—intended to present this evidence to participants—mirror actual situations in everyday life can sometimes be challenging. For example, scholars frequently recommend that highly emotive manipulations be used to prime participants' implicit BJW, though this suggestion is not always adopted (for discussions, see Ellard et al., 2016; Hafer & Bègue, 2005). However, instances where it has been applied, such as an atypical scenario of an innocent woman appearing to receive painful electric shocks (Lerner & Simmons, 1966), do not always seem to generalize well to daily life. The same could be said for more common, but perhaps sometimes less emotive BJW stimuli (e.g., written hypothetical scenarios; Hafer & Bègue, 2005). These drawbacks are particularly noteworthy in light of research suggesting that less dramatic and more quotidian unfair experiences can still pose a threat to BJW, such as good breaks (e.g., coming across the perfect parking spot) and bad breaks (e.g., rain on the weekend; Gaucher et al., 2010). This raises the possibility that various other daily experiences, such as being (un) fairly rewarded for completing a task, may produce daily fluctuations in BJW, especially when they are occurring in people's actual lived experience.

A limited variety of experimental stimuli can also challenge the ecological validity of a series of experiments. For example, most of the experiments testing the effects of BJW on well-being rely on modest variations of a manipulation devised by Correia and Vala (2003). In these studies, participants—primarily students—were asked to read a fictitious article that either affirmed or denied the career success attributed to university education (for specific study details, see Bartholomaeus, Burns, & Strelan, 2023; Correia et al., 2009; Schmitt et al., 2023; and see Igou et al., 2021 for some different manipulations). While these manipulations might reasonably represent a set of scenarios that could alter BJW in daily life, their narrow scope struggles to accommodate a broader array of experiences that could elicit additional

fluctuations. This limitation is significant because it restricts the generalizability of extant experimental BJW-well-being effects to a rather small set of stimuli (see Yarkoni, 2020).

Additionally, given the close relationship between personal- and general-BJW (e.g., Hafer et al., 2020), experiments in this area may also struggle to target one of these constructs in isolation (for discussions, see Bartholomaeus, Burns, & Strelan, 2023; Schmitt et al., 2023). For example, in some of the preceding BJW-well-being experiments, the authors explicitly intended to target personal-BJW; however, the manipulations reference the un(just) fate of others, which may inadvertently affect general-BJW as well (Bartholomaeus, Burns, & Strelan, 2023; Schmitt et al., 2023). Although the delineation between these spheres of BJW seems more clearly defined in the cross-sectional individual difference literature (e.g., when both are accounted for in analyses), this body of work is not without its own shortcomings. In particular, the instructions of explicit BJW trait measures tend to employ unspecified or broad reflection periods (e.g., simply asking participants how much they agree or disagree with the scale items). Accordingly, these reports likely capture more abstract, overarching perceptions about the justness of the world and encourage participants to rely on more extensive recall. These qualities can introduce various biases, resulting in a judgment that may differ notably from one that is more closely tied to daily encounters with (in)justice (e.g., Newman & Stone, 2019; Robinson & Clore, 2002).

One way to address the limitations of experimental and cross-sectional investigations is to examine BJW in daily life using daily diary methodology. This technique involves collecting end-of-day reports over several days or weeks as participants go about their lives across a variety of real-world settings. The daily reports also utilize a much more concrete and shorter reflection period (i.e., a given day), which helps attenuate biases associated with trait reports. As such, they are better at capturing more immediate, contextualized perceptions of BJW that may better correspond with daily encounters with (in)justice (e.g., Newman & Stone, 2019; Robinson & Clore, 2002). Although limited in drawing causal claims, daily diary methodology allows researchers to more easily generalize findings to daily life (e.g., Newman & Stone, 2019). This approach also enables the examination of within-person relationships, which are statistically orthogonal to, and psychologically distinct from, between-person relationships (Affleck et al., 1999; Nezlek, 2001). Separating within- and between-person variance in BJW can significantly advance research in this area, which has primarily utilized between-person designs (i.e., cross-sectional surveys and between-subjects experiments). To the best of our knowledge, only two daily life studies have incorporated BJW (Sassenrath et al., 2023, Study 4; Spence et al., 2011); however, in both cases, BJW was assessed using only trait reports. As such, the findings from these studies still concern between-person rather than within-person relationships.

1.4. The Present Research

The primary aim of the present research was to examine how personal- and general-BJW relate to well-being during the ebb and flow of daily life. To ensure our results were consistent with prior research, we conducted a cross-sectional investigation to see how measures of these constructs were related at the between-person level (Study 1). More importantly, we conducted a 2-week daily diary study to examine our more novel questions about how daily measures of these constructs were related at the within-person level (Study 2). In both studies, we ran analyses with and without accounting for both spheres of BJW, in line with prior recommendations (e.g., Hafer & Sutton, 2016). Materials, data, and code for both studies can be found on the open science framework (OSF): <https://osf.io/9uvtz>.

2. Study 1

Following past individual difference research on BJW, Study 1

examined its relationships with well-being at the between-person level of analysis. We predicted that trait personal- and general-BJW would show positive associations with several indices of trait well-being, that is, positive affect, life satisfaction, self-esteem, presence of meaning in life, and coherence, as well as negative associations with negative affect. This study was preregistered at: <https://osf.io/vufqj>.

2.1. Method

As outlined in the preregistration, we conducted analyses on the combined data from two cross-sectional samples. The target for our combined sample size was based on the needs of our planned multiple regression analyses that would include both personal- and general-BJW as simultaneous predictors of our focal outcomes. Soper's (2023) a-priori sample size calculator for multiple regression indicated that a minimum sample size of 478 would be needed for these analyses. This was determined based on a desired power of .80 to detect a small effect of $f^2 = .02$ at an alpha of .05 when entering two predictors in a model.

2.1.1. Sample 1: Participants and Procedure

We drew on data from the 124 participants who completed the baseline trait survey of the daily diary investigation. Participants were undergraduate students enrolled in introductory psychology courses at Carleton University, a large institution in Eastern Canada (see Study 2 for details about the participants and procedure).

2.1.2. Sample 2: Participants and Procedure

We aimed to recruit 415 participants (expecting exclusions) to meet the target combined sample size suggested by the power analysis. We initially recruited 438 undergraduate students enrolled in introductory psychology courses at Carleton University. The study was approved by Carleton's ethics board (#119904). Students received course credit for their participation. Data collection took place during the fall term of 2023. We flagged 55 participants for data quality concerns: 43 for failing an attention check and 12 for indicating that they did not take the study seriously via a seriousness check adapted from Aust et al. (2013) and Chen et al. (2022), with 5 of these participants being flagged for both reasons. Following our preregistered exclusion criteria, we removed those who failed the attention check or did not take the study seriously. This led to the removal of 50 unique participants, yielding a final sample of 388 students (80.4% woman, 14.9% man, 3.6% another gender identity, .3% prefer not to respond; 63.7% White/Caucasian, 11.1% Black, 5.7% Arab/West Asian, 5.4% South Asian, 4.1% other, 3.6% South East Asian, 3.4% Asian, 1.8% Latin-American, .5% Native/Aboriginal People; $M_{\text{age}} = 19.57$, $SD_{\text{age}} = 3.78$; age range 16–45).

2.1.3. Measures

Participants in both samples completed the trait measures detailed subsequently, which were selected in part for adaption to the daily timeframe. Of note, we developed and included a 2-item measure of trait prosocial behavior in both samples. We included this measure as part of our preregistration, but we did not make predictions about how it would relate to BJW. The results concerning this measure were somewhat inconclusive (e.g., trait personal-BJW showed no significant association, whereas trait general-BJW showed a significant but small positive association). In the interest of brevity, we refrained from making prosocial behavior a focus of the current paper. However, we report analyses for this measure in the Supplemental materials for interested readers. For Sample 1, we collected additional trait measures for other projects, and some analyses that addressed different questions have been published previously (see Study 2 for more information). For Sample 2, we did not collect additional trait measures, and none of the data have been used in any prior publications. See OSF for all full measures and their order of administration in both samples. For all trait measures, participants were instructed to “answer how you would generally respond.”

2.1.3.1. Belief in a just world. We employed Dalbert's (1999) 7-item personal- and 6-item general-BJW scales. Items for personal- (e.g., "I am usually treated fairly") and general-BJW (e.g., "I think basically the world is a just place") were both rated on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*).

2.1.3.2. Positive and negative affect. We conceptualized affect using the affective circumplex model (Feldman Barrett & Russell, 1998), which distinguishes between valance (positive and negative) and arousal (activated and deactivated). We evaluated each quadrant of the circumplex with five items initially sourced from a list of emotion adjectives used in prior diary research (Brandstätter, 2007) that were subsequently adapted for trait use. Following prior research (e.g., Newman et al., 2020), we measured positive activated affect with the items glad, delighted, enthusiastic, excited, and happy; we measured positive deactivated affect with the items at ease, relaxed, contented, peaceful, and calm; we measured negative activated affect with the items tense, angry, annoyed, nervous, and stressed; we measured negative deactivated affect with the items miserable, depressed, disappointed, sad, and gloomy. We asked participants to rate how strongly they generally feel each emotion on a 7-point scale (1 = *do not feel this way at all*, 7 = *feel this way very strongly*).

2.1.3.3. Life satisfaction. We used the 5-item Satisfaction with Life Scale (Diener et al., 1985) to assess an individual's judgment of how satisfied they are with their life as a whole. Participants rated items (e.g., "The conditions of my life are excellent") on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

2.1.3.4. Self-esteem. We used the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965) to assess an individual's overall self-worth. Participants rated items (e.g., "I take a positive attitude toward myself") on a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*).

2.1.3.5. Presence of meaning in life. We used the 5-item presence subscale of the Meaning in Life Questionnaire (Steger et al., 2006) to assess the extent to which one views their life as meaningful overall. Participants rated items (e.g., "I understand my life's meaning") on a 7-point scale (1 = *absolutely untrue*, 7 = *absolutely true*).

2.1.3.6. Coherence. We used the 5-item comprehension subscale of the Multidimensional Existential Meaning Scale (George & Park, 2017) to assess the specific facet of meaning related to perceiving a sense of coherence and understanding regarding one's life. Participants rated items (e.g., "My life makes sense") on a 7-point scale (1 = *very strongly disagree*, 7 = *very strongly agree*).

2.2. Results and Discussion

As preregistered, we provide the results for the combined data from

Table 1
Descriptive Statistics and Trait Correlations for Study 1 (Combined Samples 1 and 2).

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10
1. Personal-BJW	3.95	.80	.86	–									
2. General-BJW	3.45	.85	.74	.31	–								
3. Positive activated affect	4.56	1.11	.89	.37	.22	–							
4. Positive deactivated affect	4.10	1.07	.84	.38	.14	.63	–						
5. Negative activated affect	4.30	1.20	.82	–.16	–.06	–.25	–.52	–					
6. Negative deactivated affect	3.54	1.39	.90	–.25	–.12	–.47	–.54	.69	–				
7. Life satisfaction	4.33	1.33	.86	.45	.23	.59	.50	–.31	–.47	–			
8. Self-esteem	2.65	.54	.88	.31	.20	.51	.54	–.52	–.64	.59	–		
9. Presence of meaning in life	4.47	1.47	.92	.29	.19	.52	.45	–.38	–.48	.58	.62	–	
10. Coherence	4.48	1.17	.92	.39	.16	.55	.53	–.39	–.49	.60	.61	.73	–

Note. BJW = belief in a just world. All correlations were significant at $p < .001$, except for the correlations between GBJW and positive deactivated affect ($p = .002$), negative activated affect ($p = .217$), and negative deactivated affect ($p = .008$).

both samples here, and we present the analyses for the individual samples in the Supplemental materials. Descriptive statistics and trait correlations for the combined data are reported in Table 1. Personal- and general-BJW were moderately positively correlated. Consistent with our preregistered hypotheses, personal-BJW was positively associated with all the positively-valenced well-being variables and negatively associated with both forms of negative affect. In line with our expectations, the pattern of associations was similar for general-BJW, but it was not significantly associated with negative activated affect.

Next, we conducted a series of regression analyses using the *jitools* package (Long, 2020) in R. In accordance with our preregistered analysis plan, we entered personal- and general-BJW as predictors of each outcome—first separately and then simultaneously. The results of these analyses for the combined data are presented in Table 2. When entered individually, personal-BJW was positively related to all the positively-valenced well-being variables and negatively related to both forms of negative affect. General-BJW was also related to most well-being variables (except negative activated affect), though personal-BJW explained notably more variance in the well-being outcomes than did general-BJW, ranging from 2.7% to 20.3% compared to .3% to 5.5%, respectively.

When both spheres of BJW were entered as simultaneous predictors, all of personal-BJW's well-being relationships remained significant. In contrast, not only did general-BJW continue to be nonsignificantly related to negative activated affect, but it was also no longer significantly related to positive deactivated affect, negative deactivated affect, and coherence. Although both sets of relationships were attenuated, personal-BJW still explained notably more unique variance in the well-being outcomes than did general-BJW, ranging from 2.4% to 15.8% compared to just above 0% to 1.4%, respectively. In a set of unregistered analyses, we also compared the strength of the unstandardized coefficients using the *multcomp* package (Hothorn et al., 2008). These analyses revealed that personal-BJW was significantly more strongly related to all outcomes than general-BJW (see the far-right columns of Table 2).

To summarize this trait level investigation, both personal- and general-BJW exhibited beneficial relationships with well-being, but links for personal-BJW were stronger and more consistent, in line with past work (e.g., Sutton et al., 2017). It is worth noting that although the combined and individual sample results were largely congruent, some discrepancies were present, particularly in sample 1 (see Supplemental Tables 1–4). Given that this sample was substantially smaller, and in line with the notion that aggregated results across studies provide estimates that are more reliable than those from single studies (Fabrigar & Wegener, 2016), we assign more weight to the results from the combined data.

3. Study 2

In this daily diary study, participants completed end-of-day reports

Table 2
Trait Analyses of Personal- and General-BJW Predicting Well-Being in Study 1 (Combined Samples 1 and 2).

Outcome Variable	Separate Predictors				Simultaneous Predictors				Comparison	
	Personal-BJW		General-BJW		Personal-BJW		General-BJW			
	<i>b</i> [95% CI] <i>sr</i> ²	<i>p</i>	<i>b</i> [95% CI] <i>sr</i> ²	<i>p</i>	<i>b</i> [95% CI] <i>sr</i> ²	<i>p</i>	<i>b</i> [95% CI] <i>sr</i> ²	<i>p</i>	<i>t</i>	<i>p</i>
Positive activated affect	.51 [.40, .62] (.135)	< .001	.29 [.18, .40] (.050)	< .001	.46 [.34, .57] (.099)	< .001	.16 [.05, .27] (.014)	.005	3.18	.002
Positive deactivated affect	.51 [.40, .61] (.144)	< .001	.18 [.07, .28] (.020)	.002	.50 [.38, .61] (.125)	< .001	.03 [−.07, .14] (.001)	.547	5.14	< .001
Negative activated affect	−.25 [−.38, −.12] (.027)	< .001	−.08 [−.20, .05] (.003)	.217	−.24 [−.38, −.11] (.024)	< .001	−.01 [−.13, .12] (.000)	.915	−2.19	.029
Negative deactivated affect	−.44 [−.58, −.29] (.063)	< .001	−.19 [−.33, −.05] (.014)	.008	−.41 [−.57, −.26] (.051)	< .001	−.07 [−.22, .07] (.002)	.322	−2.76	.006
Life satisfaction	.75 [.62, .88] (.203)	< .001	.36 [.23, .50] (.055)	< .001	.69 [.56, .83] (.158)	< .001	.16 [.04, .29] (.010)	.011	4.93	< .001
Self-esteem	.21 [.15, .26] (.093)	< .001	.12 [.07, .18] (.038)	< .001	.18 [.12, .24] (.067)	< .001	.07 [.02, .13] (.011)	.012	2.42	.016
Presence of meaning in life	.54 [.38, .69] (.085)	< .001	.32 [.18, .47] (.035)	< .001	.48 [.32, .64] (.061)	< .001	.19 [.04, .34] (.011)	.015	2.26	.025
Coherence	.57 [.45, .69] (.151)	< .001	.22 [.10, .34] (.026)	< .001	.55 [.42, .67] (.127)	< .001	.06 [−.05, .18] (.002)	.278	4.91	< .001

Note. BJW = belief in a just world; *b* = unstandardized coefficient; CI = confidence interval; *sr*² = squared semipartial correlation: proportion of variance in an outcome uniquely explained by a predictor. In the far-right columns, we created a contrast that subtracted the unstandardized coefficient for general-BJW from the unstandardized coefficient for personal-BJW. A positive value indicates that the personal-BJW coefficient is more positive than the general-BJW coefficient, and a negative value indicates the general-BJW coefficient is more positive than the personal-BJW coefficient.

on BJW and well-being for two weeks via a smartphone application. Implementing repeated daily measurements allowed us to capture dynamic daily fluctuations in BJW across a variety of naturalistic contexts and situations, helping to: (1) address important limitations of implicit (experimental) and explicit (individual differences) approaches to BJW and (2) examine its relationships with well-being at the within-person level of analysis.

3.1. Method

3.1.1. Participants and Procedure

Data were drawn from a larger daily diary project in which some analyses that addressed different questions from the present study have been published previously (Lutz, Zelenski, & Newman, 2023; Newman et al., in press). Participants were undergraduate students enrolled in introductory psychology courses at Carleton University. The study was approved by Carleton's ethics board (#116323). Students received course credit and one ticket for a 200 dollar draw for every survey they completed throughout the study. Data collection began during the start of the winter term of 2022 and concluded at the end of the spring term so that the first author could meet degree requirements by the summer term.

Online information sessions that accommodated up to eight participants were held on Microsoft Teams. During the session, participants learned about the study procedure, provided informed consent, and were shown how to download and use the smartphone application ExpiWell (Tay, 2020). After the session, participants were asked to fill out a baseline survey on ExpiWell that contained trait and demographic measures before 11:59 pm that night, as the survey would expire at this time. Starting the next day, participants received a notification on ExpiWell every evening at 8:00 pm for two consecutive weeks informing them that their daily survey was available. Participants were asked to complete each survey near the end of their night but before 11:59 pm, at which time the survey would expire. During the information session, participants had the option of receiving a reminder email for their daily surveys at a time of their choosing. We implemented a 1-hour grace period for responses to be recorded in ExpiWell and accepted entries until 1:00 am.

In total, 1448 daily reports were completed by 135 participants.

Although the present study was not preregistered with an analysis plan, the data were cleaned according to preregistered exclusion criteria for the larger diary project: <https://osf.io/szujg>. We first planned to remove duplicate entries and then those completed after 1:00 am, but there were no such entries. We then removed participants who completed less than 5 valid daily reports, consistent with prior diary studies (e.g., Lutz, Newman, et al., 2023; Newman et al., 2020). This resulted in a final sample of 1439 daily reports (*M* = 11.45, *SD* = 2.23, median = 12) from 132 participants; however, it should be noted that baseline trait and demographic data were only available from 124 (72.6% female, 26.6% male, .8% other; 41.9% White/Caucasian, 15.3% South Asian, 15.3% Black, 6.5% Arab/West Asian, 4.8% South East Asian, 4.0% Latin-American, 4.0% other, 3.2% Asian, 2.4% Native/Aboriginal People; *M*_{age} = 21.20, *SD*_{age} = 4.97; age range 17–50). While we aimed to have 150 participants take part in the study, particularly the diary portion (see preregistration linked previously), our final sample size still accords well with those plans and with sample size recommendations for examining within-person relationships (e.g., Nezlek, 2012).

3.1.2. Trait Measures

Participants completed the trait measures outlined in Study 1 in the baseline survey. Trait measures of other constructs that are not central to the present study were also collected (see OSF for all full measures and their order of administration). For all trait measures, participants were instructed to “answer how you would generally respond.”

3.1.3. Daily Measures

Participants completed the following measures in the daily surveys. Daily measures of other constructs that are not central to present study were also collected (see OSF for all full measures and their order of administration). Of note, we collected a daily version of the 2-item prosocial behavior measure discussed in Study 1. Both daily personal- and general-BJW showed somewhat small positive relationships with this measure. To be consistent with Study 1 and in the interest of brevity, we report analyses for this measure in the Supplemental materials for interested readers. We derived daily items either by adapting them from their corresponding trait scales used in the baseline survey based on a consideration of factor loadings reported in the initial article proposing the trait scale and suitability for daily administration (Nezlek, 2012), or

from existing research. For all daily measures, participants were instructed to “answer how you would respond today”.

3.1.3.1. Belief in a just world. We assessed daily personal- and general-BJW each with three items adapted from their respective trait scales. Participants were instructed to “Please continue to think about your day today and all that happened today. To what extent do you agree or disagree with the following statements today?”. The personal-BJW items were: “I believe that, by and large, I deserved what happened to me today,” “Today, I was treated fairly,” and “Overall, the events in my life today were just.” The general-BJW items were: “Today, I felt that people got what they deserved,” “I basically felt that the world was a fair place today,” and “Thinking about the events of today, I am confident that justice prevailed over injustice.” Participants made ratings on the same 6-point scale as the trait measure. We conducted a multilevel exploratory factor analysis on these items using Mplus (Muthén & Muthén, 1998–2017), which indicated that the items loaded cleanly onto two separate factors, as expected (see Supplemental materials).

3.1.3.2. Affect. We assessed daily affect using the same circumplex model that we used for the trait scales. However, to reduce participant burden, we assessed each quadrant of the circumplex with three items instead of five. In line with previous diary studies (e.g., Newman et al., 2020), we measured positive activated affect with the items delighted, happy, and excited; we measured positive deactivated affect with the items at ease, calm, and peaceful; we measured negative activated affect with the items nervous, tense, and stressed; we measured negative deactivated affect with the items sad, depressed, and gloomy. We asked participants to indicate how strongly they felt each emotion that day on a 7-point scale (1 = *did not feel this way at all*, 7 = *felt this way very strongly*).

3.1.3.3. Life satisfaction. We assessed daily life satisfaction with one item used in prior diary studies (e.g., Newman et al., 2020): “How satisfied were you with your life today?”. Participants made ratings on a 7-point scale (1 = *not at all*, 7 = *very satisfied*).

3.1.3.4. Self-esteem. We assessed daily self-esteem with one modified item from Robins et al. (2001). We first asked participants: “Please indicate how characteristic the following statement was of you today:” and then presented them with the item “Today, I had high self-esteem.” Participants made ratings on a 7-point scale (1 = *very uncharacteristic of me today*, 7 = *very characteristic of me today*). A version of this item has been used in a prior diary study (Wilt et al., 2021).

3.1.3.5. Presence of meaning in life. We assessed daily presence of meaning in life with two items used in prior daily diary studies (e.g., Kashdan & Nezlek, 2012): “How meaningful did you feel your life was today?” and “How much did you feel your life had purpose today?”. Participants made ratings on a 7-point scale (1 = *not at all*, 7 = *very much*).

3.1.3.6. Coherence. We assessed daily coherence using three items adapted from the trait scale: “Today, I knew what my life is about,” “Looking at my day as a whole, things seem clear to me,” and “I can make sense of the things that happened in my life today.” Participants made ratings on the same 7-point scale as the trait measure. The former two items have been used in a prior diary study (Lutz, Newman, et al., 2023).

3.2. Results and Discussion

The results for the baseline trait measures were reported as part of Study 1 (see Supplemental Tables 1 and 3). The diary data were multilevel in nature, such that days (level 1) were nested within persons (level

2). To account for this nested structure, they were analyzed using a series of multilevel models.

We conducted most analyses using the *lme4* package (Bates et al., 2015) in R. Before our main analyses, we examined the descriptive statistics, reliability, and convergence of the daily measures. To provide estimates of the means and variances, we ran unconditional models in which each daily variable was entered as the outcome with no predictors. These results are presented in Table 3.

The distribution of variances suggested that all variables, including both spheres of BJW, showed sufficient within-person variation to examine within-person relationships. As recommended by Nezlek (2017), reliabilities for the multi-item scales were obtained using three-level null models in which items of a given scale were nested within days and days were nested within persons. As shown in Table 3, all daily measures had reasonably high reliabilities (see Table 3). We also calculated a convergence estimate for each daily measure, which was defined as the correlation between the daily average and corresponding trait measure (Nezlek, 2002). The correlation was obtained by taking the square root of the percent the between-person variance from the daily measure null model (described earlier) was reduced when the corresponding trait scale was entered as a predictor at level 2. These analyses indicated that both forms of BJW had the lowest correlations among all study variables; however, these correlations were still reasonably high (see Table 3). While the slightly lower correlations for the BJW measures may be concerning to some readers, it is crucial to note that they do not suggest that these scales are invalid. Rather, they indicate that the processes underlying trait and daily judgments (aggregated over two weeks) can vary considerably and capture different thoughts, feelings, and behaviors, as discussed in the introduction.

Within-person correlations are reported in Table 4. Personal- and general-BJW were moderately-strongly positively correlated. Both personal- and general-BJW were positively associated with all the positively-valenced well-being variables and negatively associated with both forms of negative affect.

Our main analyses concerned same-day within-person relationships between BJW and well-being. In separate models, personal-BJW and general-BJW were entered as separate predictors of each well-being variable. Both spheres of BJW were person-mean centered, that is, centered around each individual's mean to control for any individual differences in these measures (Enders & Tofghi, 2007), and intercepts and slopes were allowed to vary randomly across participants. Effect sizes, $r_w^{(f)}$, were calculated following recommendations by Rights and Sterba (2019). The $r_w^{(f)}$ statistic is defined as the square root of the proportion of variance explained by within-person predictors via fixed slopes and random slope variation/covariation. This is similar to a measure of the square root of the proportion reduction in variance, akin to a correlation (Raudenbush & Bryk, 2002). It is important to note that these estimates may not intuitively correspond with p -values since they combine the variance associated with both fixed and random effects. These estimates were obtained using R code provided by Rights and Sterba (2019). The models were as follows:

$$\text{Day level : } y_{ij}(\text{well-being variable}) = \beta_{0j} + \beta_{1j}(\text{personal-or general-BJW}) + r_{ij}$$

$$\text{Person level : } \beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

As shown in the left portion of Table 5, when entered individually, personal-BJW on a given day was positively related to all the positively-valenced well-being variables and negatively related to both forms of negative affect. General-BJW mirrored these relationships. However, effect sizes were sometimes notably stronger for personal-BJW (r_s ranging from .36 to .49) than for general-BJW (r_s ranging from .28 to .39).

In the next set of analyses, we accounted for the covariation between

Table 3
Descriptive Statistics, Reliability, and Convergence of Daily Measures for Study 2.

Variable	Mean	Variance			Reliability	Convergence
		Within	Between	ICC		
Personal-BJW	4.19	.64	.41	.39	.80	.47
General-BJW	3.26	.66	.92	.58	.75	.41
Positive activated affect	3.81	1.29	.83	.39	.71	.63
Positive deactivated affect	3.87	1.04	.72	.41	.72	.51
Negative activated affect	3.49	1.33	1.00	.43	.69	.58
Negative deactivated affect	2.74	1.21	.98	.45	.73	.60
Life satisfaction	4.24	1.63	1.12	.41	–	.52
Self-esteem	3.98	1.60	1.07	.40	–	.57
Presence of meaning in life	4.15	1.14	1.27	.53	.83	.72
Coherence	4.35	.86	.86	.50	.81	.64

Note. ICC = intraclass correlation coefficient; proportion of between-person variance divided by total variance; ICCs calculated using unrounded variances. Reliabilities for multi-item measures were obtained using an approach outlined by [Nezlek \(2017\)](#). Convergence refers to the correlation between the daily average and corresponding trait scale ([Nezlek, 2002](#)). BJW = belief in a just world.

Table 4
Within-Person Correlations for Study 2.

Variable	1	2	3	4	5	6	7	8	9	10
1. Personal-BJW	–									
2. General-BJW	.47	–								
3. Positive activated affect	.38	.27	–							
4. Positive deactivated affect	.38	.25	.60	–						
5. Negative activated affect	–.29	–.21	–.32	–.54	–					
6. Negative deactivated affect	–.37	–.20	–.46	–.46	.51	–				
7. Life satisfaction	.46	.34	.52	.48	–.35	–.51	–			
8. Self-esteem	.40	.31	.47	.44	–.31	–.46	.68	–		
9. Presence of meaning in life	.38	.29	.47	.42	–.28	–.41	.57	.51	–	
10. Coherence	.39	.32	.43	.41	–.31	–.44	.52	.48	.63	–

Note. BJW = belief in a just world. All correlations were significant at $p < .001$.

Table 5
Same-Day Within-Person Analyses of Personal- and General-BJW Predicting Well-Being in Study 2.

Outcome Variable	Separate Predictors								Simultaneous Predictors							
	Personal-BJW				General-BJW				Personal-BJW			General-BJW			Comparison	
	<i>b</i>	<i>t</i>	<i>p</i>	$r_w^{(f_1^2)}$	<i>b</i>	<i>t</i>	<i>p</i>	$r_w^{(f_1^2)}$	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>	<i>z</i>	<i>p</i>
Positive activated affect	.54	14.04	< .001	.37	.40	8.02	< .001	.35	.45	10.64	< .001	.20	4.00	< .001	3.31	< .001
Positive deactivated affect	.50	12.33	< .001	.42	.33	8.07	< .001	.30	.45	10.16	< .001	.11	2.72	.008	4.68	< .001
Negative activated affect	–.45	–8.96	< .001	.36	–.30	–6.07	< .001	.28	–.39	–7.34	< .001	–.13	–3.03	.003	–3.27	.001
Negative deactivated affect	–.58	–10.45	< .001	.49	–.28	–5.50	< .001	.32	–.57	–9.77	< .001	–.03	–.66	.507	–6.78	< .001
Life satisfaction	.75	14.54	< .001	.49	.53	9.69	< .001	.39	.62	13.74	< .001	.24	4.65	< .001	4.61	< .001
Self-esteem	.65	13.44	< .001	.42	.48	9.38	< .001	.34	.56	10.39	< .001	.21	3.74	< .001	3.50	< .001
Presence of meaning in life	.53	12.59	< .001	.42	.38	8.93	< .001	.33	.45	9.73	< .001	.18	3.89	< .001	3.49	< .001
Coherence	.47	12.12	< .001	.44	.38	9.69	< .001	.37	.39	8.83	< .001	.20	4.65	< .001	2.47	.014

Note. BJW = belief in a just world; *b* = unstandardized coefficient. Effect sizes, $r_w^{(f_1^2)}$, were calculated following recommendations by [Rights and Sterba \(2019\)](#). The $r_w^{(f_1^2)}$ statistic is defined as the square root of the proportion of variance explained by within-person predictors via fixed slopes and random slope variation/covariation. This is similar to a measure of the square root of the proportion reduction in variance, akin to a correlation ([Raudenbush & Bryk, 2002](#)). Note that these estimates may not intuitively correspond with *p*-values since they combine the variance associated with both fixed and random effects. In the far-right columns, we created a contrast that subtracted the unstandardized coefficient for general-BJW from the unstandardized coefficient for personal-BJW. A positive value indicates that the personal-BJW coefficient is more positive than the general-BJW coefficient, and a negative value indicates the general-BJW coefficient is more positive than the personal-BJW coefficient. Due to space constraints, confidence intervals are presented in Supplemental Table 5.

personal- and general-BJW by entering them as simultaneous person-mean centered predictors of each well-being variable in separate models. Intercepts and slopes were again allowed to vary randomly, but we trimmed random effects from these models if the variances were particularly low and the model encountered convergence or singularity

issues (see [Nezlek, 2012](#), for a discussion of similar practices). Also of note, the effect size code from [Rights and Sterba \(2019\)](#) only provides the overall effect size for all predictors in a model. Given that our interest was specifically in the individual effect sizes for personal- and general-BJW, effect sizes were not obtained for these models. The

models were as follows:

$$\begin{aligned} \text{Day level : } y_{ij}(\text{well-being variable}) &= \beta_{0j} + \beta_{1j}(\text{personal-BJW}) \\ &+ \beta_{2j}(\text{general-BJW}) + r_{ij} \\ \text{Person level : } \beta_{0j} &= \gamma_{00} + u_{0j} \\ \beta_{1j} &= \gamma_{10} + u_{1j} \\ \beta_{2j} &= \gamma_{20} + u_{2j} \end{aligned}$$

As can be seen in the right portion of [Table 4](#), when entered simultaneously, personal-BJW continued to be significantly related to all outcomes, whereas general-BJW was no longer related to negative deactivated affect. A comparison of the strength of the unstandardized coefficients using the *multcomp* package ([Hothorn et al., 2008](#)) revealed that personal-BJW was significantly more strongly related to all outcomes than general-BJW.

The diary data also provided an opportunity to explore the direction of BJW's relationships with well-being through the use of lagged within-person analyses ([Nezlek, 2012](#)). To do this, we specified a series of models that separately tested the lagged relationship from each sphere of BJW to each well-being variable the following day, as well as the lagged relationship from each well-being variable to each sphere of BJW the following day. In these models, we controlled for the outcome measure on the previous day and conducted a separate set of models that also controlled for the other sphere of BJW on the previous day. As before, all predictors were person-mean centered, intercepts and slopes were permitted to vary randomly, with random effects being trimmed as appropriate when convergence or singularity issues arose, and effect size estimates were not calculated for these models due to the presence of multiple predictors.

The results of these analyses did not provide strong evidence of lagged relationships from one day to the next but are nonetheless presented in Supplemental Table 6 for interested readers. The only significant lagged relationship was from negative deactivated affect to lower next-day general-BJW ($p = .028$).

To summarize this daily level investigation, both personal- and general-BJW exhibited considerable day-to-day variation. Furthermore, both spheres of BJW demonstrated beneficial same-day relationships with well-being, with those for personal-BJW tending to be stronger and more consistent. Lagged analyses from one day to the next did not provide compelling evidence that could elucidate the direction of these relationships.

4. General Discussion

This is the first investigation of which we are aware to examine BJW over time in daily life. Critically, our daily diary study revealed that both personal- and general-BJW exhibited considerable within-person (daily) variability. This finding constitutes a notable extension of past work in this area, which has largely relied on experimental and cross-sectional methods, techniques that can have significant shortcomings. Our diary approach helped address these issues. First, the data were collected while participants went about their daily lives. As such, the daily assessments likely covered times participants either personally experienced or witnessed perceived (in)justices, thereby making them sensitive to a variety of real-world situations that could be difficult to fully capture in controlled laboratory environments ([Newman & Stone, 2019](#)). Additionally, the shorter and more concrete reflection period of the daily reports likely helped substantially mitigate potential recall biases associated with cross-sectional trait measures of BJW ([Newman & Stone, 2019](#); [Robinson & Clore, 2002](#)), offering more immediate, contextualized perceptions of BJW that align more closely with daily encounters with (in)justice compared to much past work. Overall, the observed day-to-day variability in BJW aligns with the notion that individuals are responsive to both confirmatory and disconfirmatory evidence for the notion that the world is a just place (e.g., [Lerner et al., 1976](#); [Schmitt et al., 2023](#)). It also resonates with work indicating that more mundane, quotidian unfair experiences can challenge BJW

([Gaucher et al., 2010](#)).

Across both studies, personal- and general-BJW evidenced beneficial relationships with various aspects of well-being. Our findings at the between-person level are consistent with overall trends observed across past cross-sectional research. These studies indicate that personal-BJW is often more strongly and consistently associated with greater well-being than general-BJW, a pattern that tends to persist irrespective of whether these two dimensions are analyzed independently or together (e.g., [Chobthamkit et al., 2022](#); [Correia & Dalbert, 2007](#); [Dalbert, 1999](#); [Sutton et al., 2017](#)). This alignment of our findings with prior cross-sectional studies provides collective support for the broader notion that more enduring worldviews can support well-being, especially those that are highly pertinent to the self (e.g., [George & Park, 2016](#)), as reflected in trait personal-BJW ([Dalbert, 1999, 2001](#)). The results of our within-person analyses build upon these between-person insights. They demonstrate that daily perceptions of BJW, which could be interpreted as daily manifestations of aspects of one's worldviews, covary in a positive manner with daily states of well-being, with personal-BJW again tending to show stronger and more consistent relationships than general-BJW. This within-person pattern also persisted regardless of whether both dimensions of BJW were analyzed independently or together.

Multiple factors appear to contribute to the more robust link between personal-BJW and well-being. First, many functions by which BJW is thought to promote well-being (e.g., fostering a sense of trust, empowerment, control) seem to be more relevant to personal- than general-BJW (e.g., [Bartholomaeus & Strelan, 2019](#); [Dalbert, 2001](#); [Goodwin & Williams, 2023](#)). These functions may contribute to stronger well-being relationships for personal- than for general-BJW at both between- and within-person levels. Future research may wish to further examine this possibility (for recent work on BJW functions, see [Bartholomaeus, Burns, & Strelan, 2023](#); [Bartholomaeus, Strelan, & Burns, 2023](#); [Goodwin & Williams, 2023](#)).

Second and relatedly, given that personal-BJW pertains to justice beliefs about one's own life, it is perhaps unsurprising that it is often better at predicting self-oriented outcomes like well-being (e.g., [Bartholomaeus & Strelan, 2019](#); [Goodwin & Williams, 2023](#)). Justice beliefs concerning the lives of others (general-BJW) are posited to be of secondary importance, and thus less intimately connected to personal well-being (e.g., [Chobthamkit et al., 2022](#); [Goodwin & Williams, 2023](#)). This is because just world theorizing suggests that the perceived justness of other people's fates is significant primarily to the extent that it bears implications for the justness of one's own fate (e.g., [Hafer & Bègue, 2005](#); [Lerner, 1980](#)). Overall, the differential relationships that each sphere of BJW exhibits with well-being, as observed here and much past research, underscores the value of distinguishing between them. However, considering that individuals appear to take both spheres into consideration when responding to scale items (e.g., [Bartholomaeus, Burns, & Strelan, 2023](#); [Hafer et al., 2020](#)), it seems useful to continue accounting for their shared variance when examining their relationships with relevant criterion variables (e.g., [Hafer & Sutton, 2016](#)).

In an effort to gain insight into the direction of BJW's relationships with well-being, we conducted 1-day lagged within-person analyses using our diary data. The results of these analyses did not provide compelling evidence of lags from one day to the next. Experiments and longitudinal studies conducted over different timespans have provided some evidence that BJW can lead to greater well-being, and vice versa, with the bulk of support for these effects coming from experimental research ([Bartholomaeus, Burns, & Strelan, 2023](#); [Bartholomaeus, Strelan, & Burns, 2023](#); [Correia et al., 2009](#); [Igou et al., 2021](#); [Otto et al., 2009](#); [Schmitt et al., 2023](#)). The lack of compelling 1-day lagged relationships in our diary data, coupled with somewhat similar findings from more extensive longitudinal studies, contrasts with the more consistently observed effects in short-term experimental paradigms. In such experimental settings, BJW or well-being is manipulated, and the corresponding dependent variable is assessed immediately or within a

few minutes of the manipulation. This disparity may imply that these BJW relationships are relatively fleeting or diminish to such a small extent beyond very short timespans that existing longitudinal designs have often struggled to detect them. In our case, it is possible that the lag between days was too long to capture shorter-lived relationships that could occur within the same day. To capture these potentially more immediate relationships in daily life, researchers could employ ecological momentary assessment (EMA) methods (Newman & Stone, 2019), which typically involve inquiring about participants' *current* states multiple times throughout the day. This technique would not only allow for the examination of momentary covariation (e.g., do people report greater well-being at moments they perceive the world to be more just?) but also lagged within-day relationships (e.g., is perceiving the world to be more just at one moment related to greater well-being during a later moment of the day, and vice versa?).

The current investigation has several limitations that warrant discussion. First, while participants in our diary study completed end-of-day reports as they went about their daily lives in naturalistic settings, we did not explicitly evaluate these settings. Doing so would offer valuable insights into the specific everyday experiences that contribute to fluctuations in BJW, as well as how these experiences may impact BJW's relationship with well-being. To address this issue, future daily life studies could take efforts to assess situational and contextual influences, such as by including inventories of daily events (e.g., Butler et al., 1994) in diary studies or taxonomies of situational characteristics (e.g., Rauthmann et al., 2014) in EMA studies. In both diary and EMA studies, researchers could also develop questions specifically targeting justice-related concerns, such as whether participants feel they witnessed or experienced an (un)just act.

Second, it is possible that our findings are specific to the measures we employed. For example, in a recent meta-analysis, different scales of each sphere of BJW, including Dalbert's (1999) measures used here, demonstrated varying associations with antisociality (Kong et al., 2021). This consideration may not only be relevant to our measures of BJW but also to our criterion measures.

Third, our samples consisted of undergraduate students attending Carleton University in Eastern Canada, who were primarily white females in their late teens and early twenties. While we respect the unique experiences of our participants, our findings may not extend to groups that encounter different levels or kinds of (in)justice. Future studies could address this limitation by evaluating the frequency and impact of experienced (in)justices in larger, more demographically diverse samples.

Finally, as with much psychological research, the present work faces issues with endogeneity, which occurs when a predictor is correlated with the error term of an outcome, resulting in biased estimates (for a review, see Hill et al., 2021). The causes of endogeneity fall into four categories: omitted variable (when a variable that influences both the predictor and the outcome is omitted from a model), simultaneity (when the predictor and the outcome have a bidirectional relationship), selection (in our case, when selection into a sample is not random), and measurement error (when the predictor is measured with error and this error is correlated with the outcome). Similar to a significant portion of past correlational BJW research, the designs of our studies and accompanying analyses leave our work susceptible to all four causes of endogeneity. Carefully planned, randomly designed experiments are regarded as a key approach for counteracting the former three causes of endogeneity. With respect to measurement error, one way to address this issue is to employ latent variable modeling. However, we did not power our studies with this much more complex analytic approach in mind, which typically requires larger sample sizes than analyses conducted at the level of observed scores like those reported here. Future investigations would benefit from using such a technique. It is important to note that our results may have also been biased by the potential for common method variance, a special case of measurement error (Hill et al., 2021). In our case, there may have been systematic error

stemming from measuring all constructs with self-report scales. It would be insightful to follow up our results using non-self-report measures if possible. In making the aforementioned points, it is worth remembering McGrath's (1982) admonition that all methods have flaws. Every method has its own strengths and weaknesses, and relying on multiple methods can provide a more comprehensive understanding of BJW. We believe that prioritizing ecological validity over causal inference in the present work is particularly warranted in the context of this literature.

5. Conclusion

In summary, the present research complements past experimental and cross-sectional approaches to the study BJW by examining how it operates over time in daily life using daily diary methodology. We found that ratings of both personal- and general-BJW varied naturally from one day to the next (i.e., within-persons). Personal-BJW emerged as more strongly related to greater well-being than general-BJW, both at the within-person same-day level and at the between-person level when assessed using broad trait reports. Overall, we hope our investigation provides an initial glimpse of the potential daily life methods hold for helping enrich research on BJW.

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CRediT authorship contribution statement

Paul K. Lutz: Writing – original draft, Formal analysis, Data curation, Conceptualization. **David B. Newman:** Writing – review & editing, Formal analysis, Conceptualization. **John M. Zelenski:** Writing – review & editing, Funding acquisition, Formal analysis, Conceptualization.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, PKL used ChatGPT 4 for editing assistance, particularly to obtain feedback on original sentences to enhance clarity when deemed helpful. After using this tool, PKL reviewed the feedback and implemented suggestions (i.e., concerning word choice, grammar) as needed. All authors carefully reviewed the writing and take full responsibility for the content of the publication.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Materials, data, and code can be found on OSF: <https://osf.io/9uvtz>

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2024.112886>.

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