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Unraveling Values and Well-Being—Disentangling Within- and Between-Person Dynamics via a Psychometric Network Perspective

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There have been long-standing debates on the relationships between values as important motivational goals and well-being. We used a longitudinal network perspective to examine how value states and well-being are related over time, separating within-person lagged, within-person contemporaneous, and between-person perspectives. A total of 227 young adults (1,007 observation points) participated in the study and rated their values states and well-being over a 6-day period. Value–well-being linkages varied across levels of analysis for participants who reported at least three times ($N = 187$). Momentary self-transcendence values predicted both simultaneous and subsequent well-being. The motivationally opposing self-enhancement values negatively related to well-being contemporaneously within person. This supports clinical research emphasizing that pursuing other-focused values increases well-being and highlights the importance of values for well-being. At the same time, individual differences in self-transcendence values were negatively related to well-being, supporting previous value models. In line with self-determination theory, openness to change values were related to well-being at both the within- and between-person level. These patterns unify diverging theoretical positions, and suggest that different dynamics operate across levels (within-person lagged or contemporaneous vs. between-person). We also provide new insights into value dynamics by describing how distributions of value states may give rise to more stable value differences between individuals. Overall, within- and between-person associations differed suggesting greater attention to person-level processes is needed.

Keywords: network analysis, values, well-being, within- vs between-person, longitudinal

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From ancient philosophers to modern economists, values (as motivational goals of importance) and well-being are thought to be related (Brey et al., 2012; Russell, 1972). Philosophers have primarily focused on what values may be worth pursuing for a happy or meaningful life, which implies that values lead to greater well-being. Indeed, major psychotherapeutic approaches are based on recognizing one's values to help people better align their personal value priorities with their behavior (Hayes, 2004; Hayes & Hofmann, 2017; Hayes & Lillis, 2012). Similarly, experimental researchers often use stimuli in which values are violated to elicit strong emotional reactions (Lench et al., 2011; Lobbestael et al., 2008; Siedlecka & Denson, 2019). Yet, one of the major challenges of psychologists over the last two decades has been to find consistent evidence on how self-rated values and well-being might be related in daily life (Boer, 2017; Boer & Boehnke, 2015; Heim et al., 2019; Sortheix & Schwartz, 2017). The empirical pattern of relationships has shown little stability across samples, implying that value ratings and well-being are not consistently related (Heim et al., 2019), which seems to run counter to traditions in philosophy. Here, we argue that it is necessary to focus on values activated in specific moments and study these activations over time.

Values may function both like traits that are relatively stable across situations and as states that are responsive to situational characteristics (Skimina et al., 2021). To date, psychologists have focused primarily on values conceptualized as traits and correlated these with broad positive or negative affective evaluations (e.g., life satisfaction, happiness, depression). Nevertheless, both self-report and neuroanatomical research has indicated a distinct difference of

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trait and state emotions (Saviola et al., 2020) and value ratings (Skimina et al., 2021). This distinction has so far been neglected in the research on values and emotions but may actually be crucial for theorizing about values (see Skimina et al., 2021). We argue that temporal dynamics is an important element that has been overlooked in previous cross-sectional research on values and well-being. By shifting to situational analyses of how values and well-being are related on a daily basis, we may gain new insights into these dynamics. Furthermore, given the clinical interest in these linkages, an examination of value states and well-being indicators has practical implications.

To provide some guidance on our study, we first briefly introduce the concept of values and recent distinctions between value states and value traits, followed by a brief discussion of well-being. We then discuss three theoretical mechanisms that may link values and well-being, differentiating a value-to-well-being (value primacy), a well-being-to-value (value inference), and a reciprocal mutual reinforcement model of value–well-being linkages. These models have been developed in different areas of psychology and we briefly review relevant research that directly or indirectly supports any of these perspectives. We then turn to the second major point for our study, which is the differentiation of within- versus between-person processes. We briefly review the major distinction and its historical roots as well as recent studies that highlight the importance to study both within- and between-person differences. In the final section of our introduction, we introduce longitudinal network models as an ideal tool to simultaneously explore the value–well-being linkages within and across individuals.

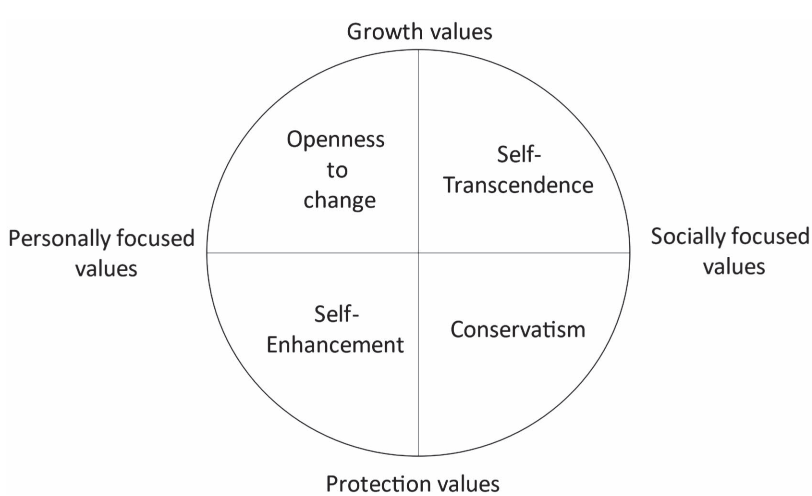
Personal Values

Values, considered broad motivational goals of individuals, have emerged as a major concept in the social sciences and are thought to reflect what a person deems important in their life (Schwartz & Bilsky, 1987). Personal values have been found to correlate with personality (Fischer & Boer, 2015), political attitudes (Boer & Fischer, 2013; Caprara et al., 2017), and cooperative behavior (Sagiv et al., 2011). The descriptive theory of human values differentiates four major value types based on their motivational compatibilities and conflicts (Schwartz et al., 2012), which can be interpreted via the rotations along the underlying dimensions.

The first description of the value space is along the differentiation of openness to change versus conservatism and self-enhancement versus self-transcendence values. The first dimension in this interpretational frame separates openness to change which feature values that are focused on promoting creativity, independence, seeking novelty, and excitement from the motivationally opposing conservatism values which emphasize the motivation to maintain order and safety, driven by an orientation to uphold established traditions and norms and resistance to change. A second dimension in this perspective of separating underlying motivational goals differentiates between self-transcendence values emphasizing the well-being of others and self-enhancement values that promote self-interest, success, and dominance. This interpretational framework has been more common in social psychology (Boer & Fischer, 2013; Maio, 2017; Rohan, 2000; Schwartz, 1992, see Figure 1).

A different way to understand this structure is to make distinctions in terms of person versus social focus and anxiety-driven self-protection versus growth. Openness to change and self-enhancement values are primarily person-focused, which regulate how individuals express their personal characteristics and interests. Self-transcendence and conservatism values on the other hand are socially focused because they are focused on social interactions with others and include motivations to preserve cooperative and positive social relations. Self-protection values are conservatism and self-enhancement. These values express a motivation to avoid or control anxieties and threats. Conservatism values are primarily focused on avoiding conflict and uncertainty. Self-enhancement values (in particular power values within this larger cluster) on the other hand are focused on controlling anxiety by actively controlling resources and individuals to control threats. In contrast to these two value clusters, anxiety-free growth values are openness to change and self-transcendence values which focus on expanding one's self by emphasizing autonomous and self-expressive exploration of experiences and promoting the selfless welfare of others and nature. These two distinctions of personal versus social and

Figure 1
Schematic Presentation of the Major Dimensions in the Schwartz Value Theory



growth versus protection focus have been central to sociological theories of values (Inglehart, 1997; Welzel, 2013). The circular structure itself independent of the interpretational orientations has been supported using self-report measures in samples from all inhabited continents and has been replicated using reaction time data and neural activation patterns (Brosch & Sander, 2015; Fischer, 2017; Maio, 2017; Schwartz, 2017; Zacharopoulos et al., 2016).

Schwartz (1992) originally proposed that values are transsituationally important goals that are relevant as guiding principles for individuals in their life in general, regardless of situational demands. In contrast to this, Skimina et al. (Skimina et al., 2018, 2021) recently pointed out that this description of values is closely aligned with personality research, which focuses on dispositional differences between individuals. The theoretical focus on goal conflicts versus compatibilities as the organizing mechanism that gives rise to the circular structure on the other hand should be best conceptualized as value states, that is, value priorities in relation to situation-specific goals. Based on this conceptualization, Skimina et al. developed a state-focused value measure and demonstrated that value states and traits are conceptually distinct. Value states showed the predicted situation-specific activation patterns, but different hierarchical organization compared to value traits (Skimina et al., 2018). Hence, value priorities in everyday contexts are more situation dependent than the supposedly stable hierarchies as proposed by Schwartz (1992). Importantly, Skimina et al. demonstrated that the within-person and between-person structures of both traits and states are not equivalent (Skimina et al., 2021). After all, individuals can pursue two values that are conceptually conflicting in different everyday situations (e.g., individuals might focus on power and achievement values at their workplace but focus on the opposite self-transcendence values in a family environment). Hence, the between-person trait and the within-person state matrices of values may show divergent patterns. In line with this reasoning, Skimina et al. (2021) found that power and hedonism values are positively correlated at the between-person level suggesting that individuals that pursue hedonism also tend to pursue control over resources and people (power values) that benefit them personally. However, at the within-person level, these two values were orthogonal, suggesting that these values are not activated or relevant at the same time.

Zooming out from the state versus trait distinctions to the conceptual organization of values and the main dimensions originally proposed by Schwartz, at the between-person level openness to change values and self-enhancement are person-focused values. Individuals differ in whether they are more or less person-focused, leading to a positive association between these two value types when examining interindividual differences. However, within individuals these two value types were clearly distinct, suggesting that a person in a specific situation may pursue one or the other value, but not both at the same time. This distinction of within- versus between-person dynamics opens up new opportunities for understanding value dynamics specifically and within- versus between-person dynamics in general. The focus on value states across multiple observations also offers possibilities to understand more complex temporal dynamics (Epskamp, 2020), which may help us understand the motivational dynamics within values over time. By examining which values are activated in specific situations over time, we may start to gain insights into whether some values show reinforcing or cyclical effects. For example, if an individual is pursuing socially oriented values, this may result in more social interactions which in turn then leads to further opportunities for pursuing social values in subsequent occasions. Therefore, a repeated assessment of value states may provide snapshots on the distribution of states that give rise to more stable trait-like distributions (Fleeson, 2001). Beyond sharpening our focus on within-person dynamics and their possible implications for trait structures, we believe that this distinction between within-person and between-person dynamics is also important for understanding well-being responses and how they may be linked to values.

Well-Being

Well-being has been a major focus in recent decades, with contributions from philosophy to economics to psychology (Brey et al., 2012; Fletcher, 2016; Fischer & Boer, 2011). Well-being is a complex variable that involves various cognitive-evaluative and emotional processes. One major distinction is between hedonic and eudaimonic conceptualizations of well-being (Ryan & Deci, 2001). Hedonic perspectives focus on the experience of positive affective states and the avoidance of negatively valenced experiences (sometimes referred to as a life full of pleasure and free of pain), whereas eudaimonic perspectives of well-being emphasize meaning and self-realization as important for the functioning of a person (Ryan & Deci, 2001; Ryff & Keyes, 1995). Although conceptually distinct, the two dimensions often highly correlate (Baselmans & Bartels, 2018; Karl et al., 2020) suggesting that they capture an overall level of a person's functioning. As this literature integrating hedonic and eudaimonic well-being highlights, it is important to highlight that well-being is the result of more than pure-emotion processing and positive affect, but also contains aspects of meaning-making (Ryan & Deci, 2001). At the same time, emotion theories are important for contemplating value–well-being linkages because of the intrinsic link between the processing of motivation and emotion dynamics at a neural level (Davis & Panksepp, 2018; Lang & Bradley, 2010; Pessoa, 2009). Therefore, we will draw upon some emotion-processing studies when discussing possible values–well-being linkages next.

Three Perspectives on Values and Well-Being Dynamics

Previous work has focused on the link between values and emotional dynamics across several different lines of inquiry. The most prevalent perspective among value researchers is that values serve as guiding principles in people's lives (Schwartz & Bilsky, 1987), and as a consequence, what a person values as important in their life will have consequences across various domains, including well-being. Schwartz et al. (2000) outline how values may influence both (1) attention to opportunities and threats in the environment and (2) their evaluation of these environmental conditions for attaining certain desired goals, that is their values. Because cognitive resources are limited, individuals selectively scan the environment to detect threats (or opportunities) that are particularly salient to the person. Applying this reasoning specifically to worries, Schwartz et al. commented:

> The greater the importance a person attributes to a value, the more consequential it is to her to attain the goals to which the value is directed and, therefore, the more she will worry about any actual or potential failure to attain these goals that she perceives. (Schwartz et al., 2000, p. 312)

This reasoning could imply a general decrease in well-being with increasing value importance (the more a person endorses any value, the more the person will worry about living up to that value, and therefore valuing anything would undermine well-being), an argument that has a long tradition in philosophy; for an Epicurean perspective, see Sellars (2021), also see discussion from a Buddhist perspective by Ghose (2004). The more common interpretation is that values provide the criteria for what emotions an individual wants to experience, which in turn determines the directions of their actions to seek out such situations, engage in behaviors that increase well-being, or to regulate emotions in ways that enhance well-being (Kang et al., 2018; Tamir et al., 2016). Hence, values are thought to drive well-being.

One important point within this line of thought is whether any values increase well-being or whether there are so-called "healthy" values that are more likely to stimulate well-being (Bilsky & Schwartz, 1994; Sagiv & Schwartz, 2000). This work is compatible with the self-determination theory (Deci & Ryan, 2012) which proposes a number of basic needs. The pursuit of some needs such as autonomy, relatedness, or competence is associated with intrinsic satisfaction which leads to higher well-being, whereas the pursuit of other goals such as fame, success, or wealth is associated with extrinsic satisfaction which ultimately undermines well-being. Hence, values that are aligned with these basic needs should be associated with greater well-being, whereas values that emphasize other goals reduce well-being (Kang et al., 2018; Smith et al., 2019; Sortheix & Schwartz, 2017). We call this perspective the "(healthy) values primacy."

A second perspective is grounded in both appraisal and communication theories of emotions (Lazarus, 1991; Van Kleef, 2009; van Kleef & Côté, 2022), in which emotions have functional roles within a larger evolutionary perspective on behavior (Darwin, 1872; Keltner & Gross, 1999). Emotional reactions serve as signals on opportunities or obstacles for achieving goals. The experience of specific emotions can signal what motivational goals are either threatened (resulting in negative affect) or achieved (resulting in positive affect). Because different emotions are often experienced in response to different behavioral goals (Nelissen et al., 2007), the experience of specific emotions provides congruent information on goal pursuit and goal achievement (Brosch et al., 2011; Brosch & Sander, 2013). This perspective is also conceptually compatible with a broader literature in neuroscience which treats emotional experience as the activation of neural circuits that motivate action for survival (Davis & Panksepp, 2018; Lang & Bradley, 2010). We call these perspectives on value–well-being linkages "value inferences" because to the extent that well-being is grounded in emotional processing, the experience of well-being would allow inferences about salient values that an individual is pursuing.

A third perspective is that values and well-being may reinforce each other (a "mutuality perspective"). This perspective is compatible with and integrates the previous two accounts: Individuals may either seek out specific emotions or specific situations that are more likely to elicit certain emotions (Nelissen et al., 2007; Tamir et al., 2016) and in turn, the experience of these emotions may then reinforce and strengthen value orientations. Schwartz et al. (2000) acknowledged that there may be reciprocal relationships, for example, once a worry has been firmly established, individuals may intensify their commitment to values and therefore, the worry may increase the subjective importance of the value. Such feedback loops are also compatible with some emerging neuroscience evidence, in that (affiliative) motivation and emotional arousal are being tracked by the same neural structures, with possible feedback loops between motivation, emotion, and behavior (Bortolini et al., 2021). See Figure 2, for a conceptual overview of the different models. In summary, three different theoretical models can be differentiated that link values and well-being, a value primacy, a value inference, and a reciprocal model of mutual reinforcement. In the next few sections, we briefly review research that directly or indirectly supports any of these three theoretical perspectives.

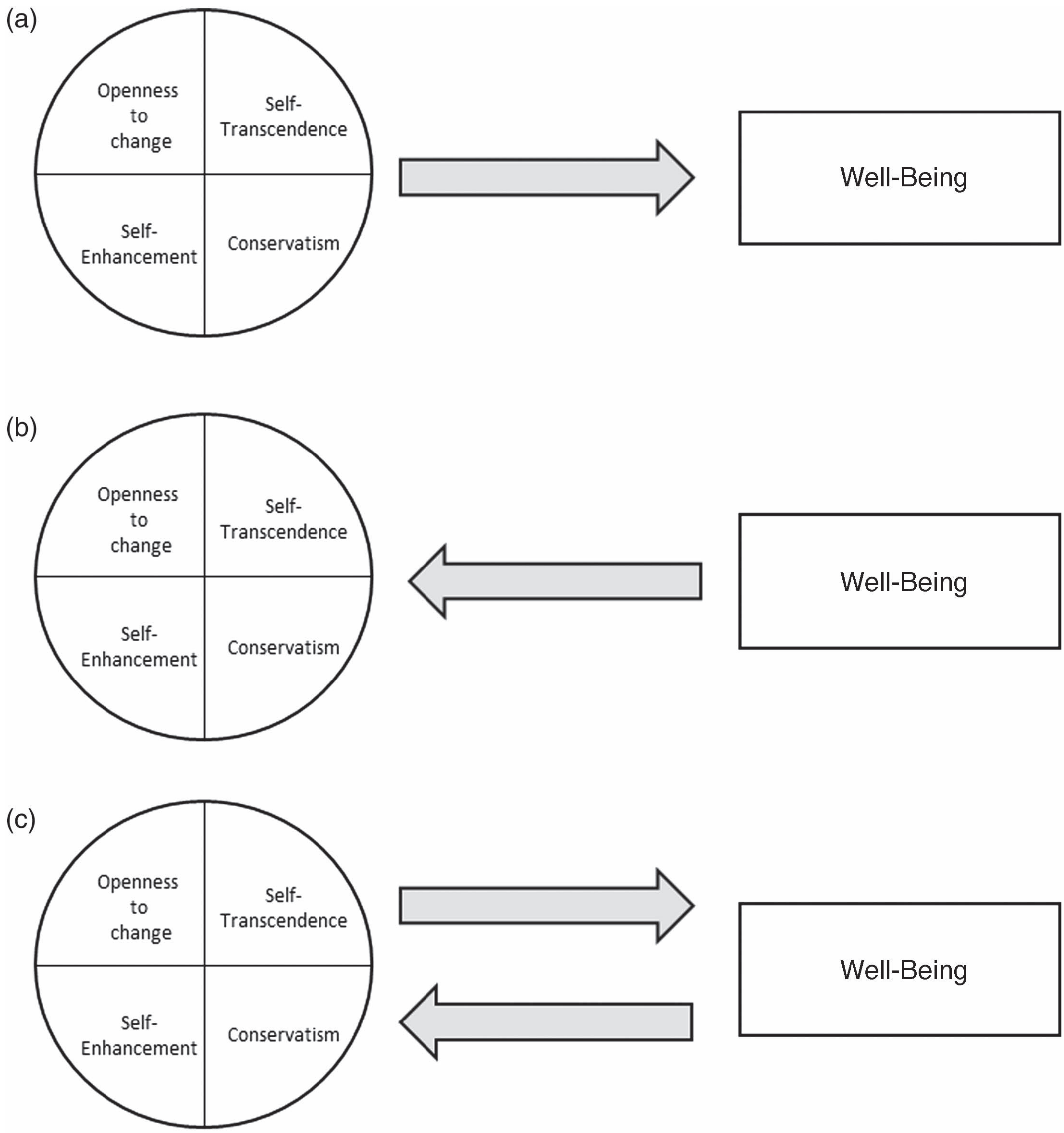
Cross-Sectional and Experimental Studies Focusing on Value Primacy

A number of studies have tried to link stable differences in value traits with broad well-being indicators (Heim et al., 2019). We identified two major approaches within the value-primacy literature that tries to explain which values may theoretically predict well-being.

First, Sortheix and Schwartz (Sortheix & Schwartz, 2017) outlined a broad theoretical account from a healthy value perspective to explain how values and well-being might be linked. They argued that values related to growth and self-expansion were predicted to be positively related to well-being because the underlying motivational content of these values promotes autonomy, relatedness, and competence which are important for both hedonistic and eudaimonic components of well-being (Ryan & Deci, 2001). The motivationally opposing values focusing on self-protection and anxiety avoidance were expected to be negatively related to well-being as the motivational goals focus on preventing or controlling threats and uncertainties, which undermines well-being. This threat perspective is also compatible with evolutionary theories of parasite stress (Thornhill & Fincher, 2014). Second, person-focused values may also promote well-being because their motivational content allows individuals to pursue their own goals and express their personal interests and capacities. In contrast, socially focused values may decrease well-being because individuals emphasizing these values are often preoccupied with the problems, needs, and expectations of others instead of their own. Hence, they may censure their own desires in order to help or coordinate with others and restrain from pursuing personal interests in order to preserve positive social relations (but for a broader discussion of these associations see also Fischer & Boer, 2011; Humphrey & Bliuc, 2021; Krys et al., 2019).

Following the circular structure of values, it becomes possible to derive specific hypotheses. The values that clearly aligned growth orientation with a person-focus are openness to change values and therefore were predicted to consistently and positively relate to well-being indicators. Conservatism values that are self-protection oriented and socially focused, hence, they were predicted to negatively relate to well-being overall. For values that combine motivational orientations that include conflicting implications for well-being such as self-transcendence (growth oriented, but socially focused) and self-enhancement (person focused, but self-protection oriented), more complex relations could be expected and these might be more context sensitive. Overall, these predictions were confirmed in both correlational and mixed-effects regression analysis with representative samples from various European countries that participated in the first three rounds of the European Social Survey as well as student samples in the Basque country (Bobowik et al., 2011;

Figure 2
Theoretical Models Linking Values and Well-Being



Note. (a) Value primacy model. (b) Value inference models. (c) Mutual reinforcement models.

Sortheix & Lönnqvist, 2014; Sortheix & Schwartz, 2017). To provide some information on the relative strength (considering the complexities of estimating effect sizes in mixed-effects regressions), the pooled correlation for life satisfaction varied between $r = .15$ with hedonism to $r = -.19$ with security values across European samples (Bobowik et al., 2011). This general support for "healthy" values is qualified by a review of correlational studies with samples from a wider range of cultures in which well-being was measured using more diverse instruments (including clinical measures): Positive associations between openness values and reduced depression were observed, but no consistent findings in relation to anxiety or stress (Heim et al., 2019).

A second line of experimental research has focused on value affirmation more broadly, relatively independent of content. Individuals who are given opportunities to affirm their values typically are able to self-regulate better in stressful situations and are more likely to engage in behaviors that increase well-being (Creswell et al., 2005; Epton et al., 2015; Falk et al., 2015; Kang et al., 2018; Levin et al., 2012). Effect sizes for experimental studies involving self-affirmation (including value affirmation) varied between $d = .14$ for intentions to $d = .32$ for behavior, with value affirmation showing significantly stronger results compared to other experimental effects ($\beta = .32$, $p < .016$; Epton et al., 2015). Importantly, these studies did not manipulate specific values. Considering that self-direction is deemed highly important compared to all other values (Schwartz & Bardi, 2001) we could expect with a certain probability that self-direction may have been likely to be affirmed in these studies, thereby, the motivational pattern could be broadly aligned with predictions by Sortheix and Schwartz. Nevertheless, universalism and benevolence values are also often highly important for individuals in general, which according to Sortheix and Schwartz may result in positive but more context-dependent patterns with well-being. Such patterns emphasizing the importance of other-oriented cognitions such as compassion, benevolence, and altruism (which are primarily embedded within the benevolence and universalisms value types by Schwartz) for well-being are also in line with a substantive number of randomized controlled trials in the clinical and health literature (Curry et al., 2018; Dickens, 2017; Fischer et al., 2020; Kirby et al., 2017).

In summary, there is evidence that values, in particular personal values which are focused on expressing personal growth and meaning might be related to positive emotions and overall well-being. To date, to the best of our knowledge, no research on value states and well-being has been conducted. Skimina et al. (2021) pointed out that the theoretical definition of values as motivational guides of behavior is more compatible with a state perspective rather than a trait perspective. What matters is what values individuals pursue in specific situations because these choices in everyday situations are likely to influence how individuals are feeling about themselves, how much meaning they may derive from their actions, and how happy or satisfied they are with their lives. In other words, the situational priority of values, that is the value states, is what should drive well-being and not so much the average differences between individuals in their abstract rating of value importance. This focus on value states is also consistent with the older theorizing by Schwartz, Boehnke, and others, when they focused on how values may guide cognitive resources to monitoring threats and opportunities in specific situations (Boehnke et al., 1998; Schwartz et al., 2000). Yet, virtually all the tests aligned with value-primacy models so far have focused on values as stable interindividual traits. If we take the conceptualization of values as motivational guides serious, then an adequate test would require studying the relationship between value states and well-being. In other words, to date no adequate test of the value-primacy hypothesis has been conducted and we may not have a clear picture of the relative importance of values for well-being, which could explain some of the mixed evidence identified in previous reviews.

Experimental Evidence Aligned With Value Inference Perspectives

Research taking a value inference perspective assumes a directional relationship that runs from emotional reaction to value endorsement. One line that lends support to this perspective comes from research on “truisms”—that is, research focused on whether and to what extent values are cognitively or emotionally elaborated (Maio, 2010, 2017; Maio & Olson, 1998). Maio et al. proposed that individuals do not have strong arguments of why a value might be important for them, because values are typically widely shared within a cultural context (Fischer & Schwartz, 2011). Because of this consensus of the relative importance, individuals are unlikely to have strong cognitive arguments of support for most values, but rather tend to feel affective support for their value beliefs. This observation is used in experimental studies which use situations that violate commonly endorsed values to induce strong emotional reactions (Lench et al., 2011; Lobbestael et al., 2008; Siedlecka & Denson, 2019). Testing this affective elaboration of values, across a number of experiments, Maio et al. (Maio & Olson, 1998; Tapper et al., 2013) gave individuals the task to analyze their reasons for endorsing a value and then evaluated whether this task may shift value priorities. The results showed that individuals (1) typically were not able to provide strong reasons for their value endorsement (in comparison to justifications of why one likes a specific beverage) and (2) in a subsequent rating task individuals asked to reflect on their values showed significant shifts in endorsement (e.g., $d = .95$ for the self-transcendence value shift in Experiment 1 in Maio & Olson). Importantly, these shifts were aligned with the coded positive or negative reasons that participants were able to provide. These studies suggest that values which individuals hold are not grounded in cognitive deliberation, but rather retroactively inferred by individuals from their emotional reactions to stimuli. Hence, these experimental studies suggest that emotional responses, including well-being, may be used to infer the importance of values and therefore, affective responses carry important information that is used to update the subjective importance of values (Brosch & Sander, 2013; Scott & Cervone, 2002).

Clinical Research Implying a Mutual Reinforcement Perspective

The clinical literature focusing on therapeutic approaches has suggested that aligning a client’s behavior with one’s personal values can have positive therapeutic benefits (Barnao et al., 2016; Dahl et al., 2020; Hayes & Hofmann, 2017; Hayes & Lillis, 2012). This work is based on clinical observations and practice, suggesting that helping individuals to recognize their personal values helps in improving mental health and well-being, which in turn facilitates following and expressing one’s values. Experimental studies inspired by these therapeutic approaches demonstrated that manipulation of the perceived behavioral gap between a person’s values and behavior decreased positive well-being indicators (Chrystal et al., 2019). Affirming self-transcendence values was associated with reward and emotional processing at the neural level, which reinforced value-expressive behaviors subsequently (Kang et al., 2018). Clinical studies together with neurobiological evidence suggest that value affirmation and well-being are mutually reinforcing (Dahl et al., 2020). Examining the value content that is targeted in contemporary clinical interventions (Hayes, 2020), the main focus seems to be on socially focused values along both the growth and protective dimension within the Schwartz framework, focusing individuals to connect with others, establish better relationships with family and friends, and emphasize qualities within the person that help to fulfill social roles as a partner or parent (Chrystal et al., 2019; Reilly et al., 2019). In fact, the concept of valued living, that is transforming values into action is often seen as an intermediate outcome of therapy, which can then be harnessed for improving well-being as a secondary outcome during continuing reflection on both the values and how they are enacted. Regularly returning to values embeds systematic feedback loops between values and well-being into the therapeutic process. This line of research, therefore, adds another rich and important perspective on the general value–well-being connection.

What might have become evident now reviewing these different approaches and studies, the focus is often on individual differences in social and personality research, but within-person changes are often the focus in experimental and clinical research. This underlines a broader bifurcation in research and theory, which we focus on next.

The Complexity of Within- Versus Between-Person Dynamics

One of the implicit tensions in the previous discussions is whether our focus is on effects within individuals or stable differences between individuals. In other words, we can aim to describe variability within individuals: How the values and the emotional states of an individual are related within specific situations and the if and how what an individual values in a specific situation may influence their well-being and vice versa. Alternatively, we could aim to describe the consistent patterns that differentiate individuals from each other, that is what values and well-being variables systematically describe the differences between individuals, including whether some individuals with some well-being profiles are more or less likely to endorse certain values. This differentiation traces its roots to the origins of differential and personality psychology (Allport, 1937; Stern, 1911). The analysis of between-person differences has dominated academic psychology, with somewhat greater attention to within-person dynamics in clinical research (Block, 1971). However, multiple authors over the years have emphasized that within- versus between-person processes are ultimately complementary and need to be integrated (Block, 1971; Cervone, 2005; Eysenck, 1952; Funder, 2001). Attempts to integrate within- and between-person processes have accelerated in recent years (Baumert et al., 2017; Beckmann & Wood, 2017; Read et al., 2010), partially driven by the greater availability of appropriate methods and analytical tools that allow integration of both perspectives. Statistically, within-person and between-person structures as special cases of multilevel systems are independent and may not need to follow the same trajectories and therefore may show nonisomorphism and nonhomology[1] (Cervone, 2005; Dansereau et al., 1984; Kievit et al., 2013; Molenaar, 2004). This statistical independence of patterns across levels is at variance with the often implicit or explicit expectation that state-like distributions of behavioral reaction norms within individuals give rise to stable interindividual differences, therefore, within- and between-person dynamics are assumed causally linked (Fleeson, 2001). In line with the statistical expectation, an increasing number of studies have suggested that dynamics within-person may not follow the same patterns that are observed when focusing on differences between individuals[2] (Beckmann et al., 2010; Fischer, Karl, et al., 2021; Newman et al., 2018; Roche et al., 2013).

To use a specific example from personality research, neuroticism and conscientiousness traits are generally negatively correlated, that is individuals expressing higher levels of neuroticism typically report lower levels of conscientiousness (van der Linden et al., 2010). However, when individuals report on their personality states within specific situations, neuroticism and conscientiousness can be positively related, likely because highly goal-directed behavior aimed at addressing challenges encountered at work as a component of conscientiousness coincides with more negative emotional states, which implies neuroticism (Beckmann et al., 2010). The important observation in this study was that at the within-person level, the association between conscientiousness and neuroticism was positive, whereas the correlation was negative using both an independent trait measure as well as aggregated state measures. Similar divergences of within-person and between-person effects in longitudinal studies have been reported for the structure of psychopathology (Wright et al., 2015), social problem-solving strategies (Fischer, Karl, & Pilati, 2021), and the interpersonal circumplex (Roche et al., 2013) as well as for the relationship between meaning in life and well-being (Newman et al., 2018).

Focusing more specifically on the value domain, between-person and within-person situation-specific value dynamics have also found to show somewhat divergent patterns. A study with Polish participants was the first to disentangle between- and within-person dynamics of values and suggested that the value dynamics differ across within- and between-person levels (Skimina et al., 2018, 2021). Importantly, as outlined by the authors, the within-person situation-specific value states appear to be more conceptually aligned with the value theories originally proposed by Schwartz (1992). For example, the within-person analysis demonstrated a conceptually clearer differentiation of the incompatibility of achievement versus benevolence values as well as self-focused openness versus socially focused security and conformity values. Hedonism values within individuals were also more closely aligned with self-focused values such as stimulation and self-direction values and became orthogonal to power and achievement values (which contrasts with the typical between-person observations, in which hedonism values are positively associated with these two values). These analyses were based on separate analyses at each level. Recent advances in longitudinal network analyses (Epskamp, 2020) offer additional opportunities and insights into the similarity and divergence of psychological processes of person-level dynamics versus interindividual difference dynamics.

Separating Within–Between Person Dynamics via Psychometric Network Models

Briefly summarizing key points so far, previous research has demonstrated that conceptually we should expect associations between values and well-being indicators, but the temporal causal directions are unclear and we may not expect to find similar patterns within persons driven by differences across time and situations compared to between-person differences. Indeed, we may need to pay greater attention to situation-specific factors given the mixed evidence observed in cross-sectional studies as well as the sensitivity to contextual effects reported in event-sampling studies. The recent differentiation of value traits versus value states further highlights the need to study instantiation of values within context. The complexity of these dynamics requires innovative new options for analyzing the data. The classic approach for analyzing longitudinal data with repeated measures for both values and well-being

[1] Isomorphism refers to structural similarities of internal relationships between sets of variables across levels, whereas homology assumes both theoretical (but not measurement) isomorphism (that is the same variables are operating at each level) and generalizability of external relationships, that is the same relationships with third constructs are observed across levels (Chen et al., 2005; Fischer et al., 2010). Due to restrictions of our data structure, in the present study, we assume isomorphism and explore the homology of constructs across levels.

[2] Within physics and mathematics, this is the problem of ergodicity (Molenaar, 2004) which assumes that the whole or the average of all components is asymptotically equal to the properties of all components making up the whole. In other words, it is assumed that the structure within and between individuals is approximately equivalent. However, this assumption is likely to be true only under very restricted circumstances (Molenaar, 2004), which requires careful examination of the within and between components.

indicators per person has been to use multilevel analyses with multiple observations across time (Level-1) nested within participants (Level-2) or some form of growth-curve models in which temporal effects are modeled (Curran et al., 2010; Raudenbush & Bryk, 2002). These methods are ideally suited for situations where a clear independent and dependent variable can be a priori defined. However, as we outlined above, the case of values and well-being is more complex and there might be reciprocal links over time. To disentangle possible reciprocal and self-reinforcing links, new methods have been proposed. One option is to use panel models with random intercepts to account for individual differences (Hamaker et al., 2018). A drawback of these methods is that they do not allow us to capture the systematic organization of variables in relation to each other. Here, we use recently proposed longitudinal network procedures that combine panel and structural equation model (SEM) approaches which allow us to separate temporal (lagged) trajectories from both average within-person dynamics and between-person mean differences (Epskamp, 2020). Extending random intercept cross-lagged panel models, the relationships at each level can be visually represented as network structures that allow for direct comparison of results across levels. Therefore, this approach can help us track the potentially mutually reinforcing links between values and emotional reactions across time while accounting for individual differences. The average lagged temporal effects are of particular interest because they provide insights into how values and well-being indicators relate to each other over time. Temporal presence is often seen as necessary but not sufficient condition for establishing causality (Pearl & Mackenzie, 2018). As we measure data on consecutive days, we can make inferences about the temporal associations, whether a variation on one variable on a given day influences variability in the other variable on a subsequent day. For example, if growth values on day n are related to well-being on day $n + 1$, but well-being on day n is not related to growth values on day $n + 1$, we can cautiously conclude that growth values temporally lead to greater well-being (assuming that no other unmeasured variables are involved, and no collider effects are included).

In addition to tracking individual change patterns on average, this network model approach also allows differentiation of the within-person dynamics from sample-level between-person differences, which are often conflated in standard analyses, as has been pointed out elsewhere (Hamaker et al., 2018; Skimina et al., 2021).

Specifically, the network can be broken down into an average lagged within-person network, mapping out how variables relate to each other (including autoregressive effects) over time. This is comparable to a cross-lagged panel model, except that it differentiates stable individual differences from true temporal effects (Hamaker et al., 2015). Second, after accounting for these lagged temporal effects, it is possible to examine the contemporaneous relationship between all variables for an individual at a given time point. As we are using a panel approach with repeated measures per individual, this can be interpreted as the average contemporaneous within-person associations between values and well-being responses. For the value components, Skimina et al. (2021) labeled this the value state model. Finally, because we have the means for each individual and variable across time, it allows for the calculation of a between-person structure based on the person's means. This analysis is most similar to typical sample-level analyses that are common in psychology and capture more stable trait-like differences between individuals (Fischer, Karl, & Pilati, 2021). This allows us to examine whether there are stable interindividual differences in these associations between values and well-being states. By separating within-person lagged, within-person contemporaneous, and between-person dynamics, we can get a better understanding of the reciprocal effects of value and well-being dynamics over time within individuals vis-a-vis stable individual differences, opening up a more detailed understanding of these processes over time.

The Present Study

We present an event-sampling study in which participants responded to daily surveys reporting on their value states and well-being within the preceding 15 min. Using a temporal network approach, we are able to test how values and well-being relate to each other within a person over time, on average within the person at any given day and between individuals. Based on previous literature, we could predict that openness to change values relate positively to well-being, whereas conservative values relate negatively to well-being (Heim et al., 2019). We cautiously predict that these associations should hold across the different within- and between-person analyses. The relationship with self-transcendence and self-enhancement with well-being may be more complex and may differ across within- versus between-person levels. Our analysis can also contribute to value research more broadly. As observed by Skimina et al. (2018, 2021), the structure of human values with their implied motivational compatibilities and conflicts may differ within and between individuals due to the different dynamics involved. Therefore, our analysis adds to recent explorations for within-person level dynamics as possibly distinct from individual differences that have dominated psychological research.

In summary, we explore the relationships between value states and well-being. Different theoretical models have been proposed, each of which has received varying degrees of empirical support. Therefore, we do not propose specific hypotheses but rather explore the relationships with an open mind, focusing on possible communalities and differences across levels of analysis, that is within and between individuals. Studying individuals repeatedly over a short period of time, we can also draw some cautious inferences about possible causal relationships based on these temporal patterns (Newman et al., 2018).

Method

Transparency and Openness

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study, and we follow journal article reporting standards (Appelbaum et al., 2018). All data, analysis code, and research materials are available at the Open Science Framework (OSF; see https://osf.io/dcmvx/?view_only=18448baabfb4416493490c57fbef76f5). For our main analyses, we used the psychonetrics package (Epskamp, 2021) in R, Version 4.1. (R Core Team, 2021). This study's design and its analysis were not preregistered.

Ethics Statement

The research has been approved by the Victoria University of Wellington Human Ethics Committee (No. 0000029258).

Participants

Participants were recruited from a pool of undergraduate students at a New Zealand (NZ) university. These students took part in a 1-hr lab session and were given the opportunity to complete daily follow-up surveys over a period of 5 days as part of a larger study on beliefs on mindfulness. Overall, individuals may respond up to six times about their current well-being and value states. We included individuals that participated in the lab study and answered at least two more surveys during the study period (minimum of three observations). All participants that agreed to take part in this study received an automated daily reminder email at 5 pm. They were free to respond to the daily survey at their own time and every response that was recorded on the day of the email was included in the study. A total of 227 participants agreed to take part in the longitudinal study which had a mean age of 19.4 years ($SD = 3.83$) and were majority female (67.4%). Of these participants, 187 participants provided data on three or more measurement occasions.

There are no clear guidelines or simulation studies for the recently developed longitudinal network models that we are reporting. Psychometric networks are correlation-based, hence, we used a correlation of .2 between values and well-being, α value of .05, and 80% power as desirable minimal thresholds, yielding a sample size of 193 participants (Faul et al., 2009). To estimate the stability and robustness of our results, we report bootstrap results (see below).

Measures

Well-Being

We measured well-being with a short seven-item version of the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) in each daily survey, to assess participants' positive mental well-being during the last 15 min prior to answering the survey. The WEMWBS captures both hedonic and eudaimonic aspects of well-being, which provides an ideal measure for capturing overall well-being. The following items were included: "I've been feeling optimistic about the future"; "I've been feeling useful"; "I've been feeling relaxed"; "I've been dealing with problems well"; "I've been thinking clearly"; "I've been feeling close to other people"; "I've been able to make up my own mind about things." Items are scored on a Likert scale varying from 1 (*none of the time*) to 5 (*all of the time*). Higher scores indicate more positive mental well-being. Reliability was acceptable within and between individuals (see Table 1).

Values

We included the values state scale developed by Skimina et al. (2018). We followed the original instructions and asked participants to respond how important each value was during the preceding 15 min. Self-enhancement values were measured with the value items: "Be better at something than others are" and "Gain some advantage for yourself." Conservatism values were measured with: "Avoid danger" and "Do what someone else expected." Self-transcendence values were measured with: "Help people you care about" and "Help someone you did not know." Finally, openness to change values were measured with: "Understand something or form an opinion on your own," "Experience something new or exciting," and "Enjoy yourself." Because traditional estimates of internal consistency mix within- and between-person information about consistency, similar to the main relationships that we aim to differentiate, in Table 1, we present the internal consistencies separately within and between individuals (Geldhof et al., 2014). The separate estimates per construct and data collection are included on the OSF. Conservatism items showed relatively low internal consistency, due to the relatively low intercorrelations between items.

Table 1
Within-Participant and Between-Participant Reliability

Scale	Level	ω	Lower 95% CI	Upper 95% CI
Self-enhancement	Within	.575	.515	.634
Self-enhancement	Between	.805	.729	.880
Conservatism	Within	.212	.102	.322
Conservatism	Between	.429	.235	.622
Self-transcendence	Within	.586	.528	.643
Self-transcendence	Between	.844	.779	.909
Openness	Within	.656	.612	.699
Openness	Between	.830	.767	.893
Well-being	Within	.818	.799	.838
Well-being	Between	.942	.926	.958

Note. CI = confidence interval.

Data Treatment

To ensure equal spacing of the data we coded days missed by participants to ensure correct temporal spacing across participants. We first checked for the normality of our computed mean scores using the Shapiro–Wilk normality test and found that the variables did not meet this criterion. To address this, we used the best normalization package (Peterson, 2021; Peterson & Cavanaugh, 2019) to automatically select the correction method that results in a distribution closest to normality for each variable. We then used this normalized data in all analyses. We used full information maximum likelihood (FIML) to account for missing data, which has been shown to perform comparatively well for recovering structural parameters for longitudinal analyses with missing data (Newman, 2003). We present the results for the nonnormalized data on the OSF (see https://osf.io/dcmvx/?view_only=18448baabfb4416493490c57fbef76f5). In this article, we report results based on the sample containing at least three observations per person. In the Supplemental Material and OSF, we report the analysis using FIML estimation with all observations. The results are qualitatively equivalent.

We checked for stationarity of our data using the tseries package (Trapletti & Hornik, 2021) and found that the null hypothesis of stationarity was not rejected at $p < .05$ for any of our variables, when using the Kwiatkowski–Phillips–Schmidt–Shin test (Kwiatkowski et al., 1992; smallest value of $p = .098$ for self-enhancement).

Data Analysis

We used the psychonetrics package (Epskamp, 2021) in R (R Core Team, 2021) to estimate our network structure. Because we have repeated measures on the same individuals, we utilized the *mlgvar* model, which is a multilevel graphical network model. Technically, it combines two classic network models, the Gaussian graphical model (GGM) and the graphical vector-autoregression model (GVAR). The former models the variance–covariance matrix and can be thought of as a conceptual equivalent to structural equation modelling. The GVAR then extends the GGM by simultaneously estimating a temporal and a contemporaneous network to account for the dependencies in the data structure due to repeated measures. Three matrices can be computed based on this data. The first matrix estimated with the GVAR encodes temporal within-person effects. Assuming stationarity in effects over time, the parameters can be thought of as the equivalent to regressions of each observation on the previous time point. When expressed in a standardized metric, this is equivalent to partial directed correlations. We call these effects within-person lagged. The contemporaneous model forms the second matrix which captures the estimated effects between all variables at the same measurement time point after accounting for temporal effects of the previous measurement point. We can use this contemporaneous matrix to examine the relationship between observations within a person while adjusting for temporal dependence of the scores. As a result, this can be interpreted as the average within-person network. We call these results within-person contemporaneous. The final matrix captures the mean structure across individuals, and it is modeled with a GGM. It can be interpreted as the variability between individuals independent of temporal variation, in other words, the person-level. Any dispositional variables that do not vary across time points (e.g., gender, religious background) are also captured in this between-person network.

For our estimation, we used FIML. Following the proposed analysis sequence and in line with the assumption of stationarity, we first fitted a model across time points in which we constrained the effects between waves to be equal. This forms what Epskamp called the *temporal network* (within-person lagged in our terminology) and allows us to examine the unique temporal relationships between the behaviors. In this network, reciprocal paths as well as self-edges in which each variable can have an effect on itself over time are permissible and can be included (Epskamp, 2020). Second, the *contemporaneous network* model represents the cross-sectional relationship between all the observations at a specific time point while taking into account the temporal relationships estimated in the previous network structure. This represents the average within-person network controlling for changes over time. The final model to be fitted modeled the relationship of the cross-temporal between-subject means. This *between-subjects network* captures the mean structures across individuals and therefore can be interpreted as a between-person network. The analysis models both within- and between-person variability, therefore, the networks need to be estimated in sequence and this differs from SEM-type models which do not separate the within- and between-person variability, and therefore a single model can be estimated.

To keep the results interpretable and for the sake of parsimony, we pruned the model (both at $p < .05$ and $p < .10$). We used nonrecursive pruning without subsequent model search for the best model fit.

Results

We initially examined the relative fit of our three models (fully connected, $p < .05$ pruned, $p < .10$ pruned). We found that the model pruned at $p < .05$ showed the best trade-off between fit and parsimony as well as the lowest Bayesian information criterion value for our data (see Table 2). We, therefore, selected this model for further analysis. All links that we report below are significant at $p < .05$ levels. Overall, the model showed an excellent fit to the data, $\chi^2(459) = 551.49$, comparative fit index = .96, root-mean-square error of approximation = .033[.021, .043]. To assess the robustness of the extracted network, we ran 500 bootstraps randomly drawing 75% of the original data. The edges in our network were highly reproducible in their pattern of presence/absence across the repeated networks. The average replication across edges was highest for the within-person contemporaneous network (99.23%, minimum and maximum edge occurrence: 95.40%–100%), followed by the between-person network (97.54%, minimum and maximum edge occurrence: 93.6%–100%), and the within-person lagged network (95.43%, minimum and maximum edge occurrence: 91.30%–100%). The edges in our network also showed high replication in strength across the bootstraps indicated by a substantial average correlation of each bootstrapped network with the extracted final network ($r_{\text{Between}} = .968$, $r_{\text{Within-Lagged}} = .905$, $r_{\text{Within-Contemporaneous}} = .976$).

Our data contained some missing information (see Supplemental Table 2). We ran group-wise comparisons (with FIML at each level of missingness) to check whether our results were stable in light of missing data. Overall, the patterns were highly stable for the within-person contemporaneous and between-person analyses. For the within-person lagged analyses, the results were highly stable up to a point when the data set may have become too small to adequately recover lagged parameters. Therefore, the results for within-person contemporaneous and between-person analyses can be considered replicated. The within-person lagged analyses largely replicated.

We calculated the three matrices of interest: within-person lagged, within-person contemporaneous, and between-person matrix and examined their overall similarities. The general pattern of loadings was statistically independent comparing the within-person lagged matrix to the between-matrix $r(25) = .13$, $p = .55$, and the within-person lagged compared to the within-person contemporaneous matrix $r(25) = .25$, $p = .22$. The between- and within-person contemporaneous matrices showed some similarity above chance levels: $r(25) = .64$, $p < .001$. This suggests that only the within-person contemporaneous and between-person matrices showed some similarity and that the within-person lagged matrix was substantively different.

Focusing on the statistically significant edges (see Figure 3A), in the within-person lagged network the autoregressive links for well-being were strongest ($r_{\text{partial directed}} = .16$), suggesting well-being

Table 2
Model Fit for the mlgvar Model

Model	*df*	AIC	BIC	RMSEA	χ^2	$\Delta\chi^2$	Δdf	*p*
Full model	435	11271.22	11465.09	.03	528.64			
Pruned at $p < .10$	458	11245.49	11365.04	.03	548.91	20.27	23	.626
Pruned at $p < .05$	459	11246.08	11362.40	.03	551.49	2.59	1	.108

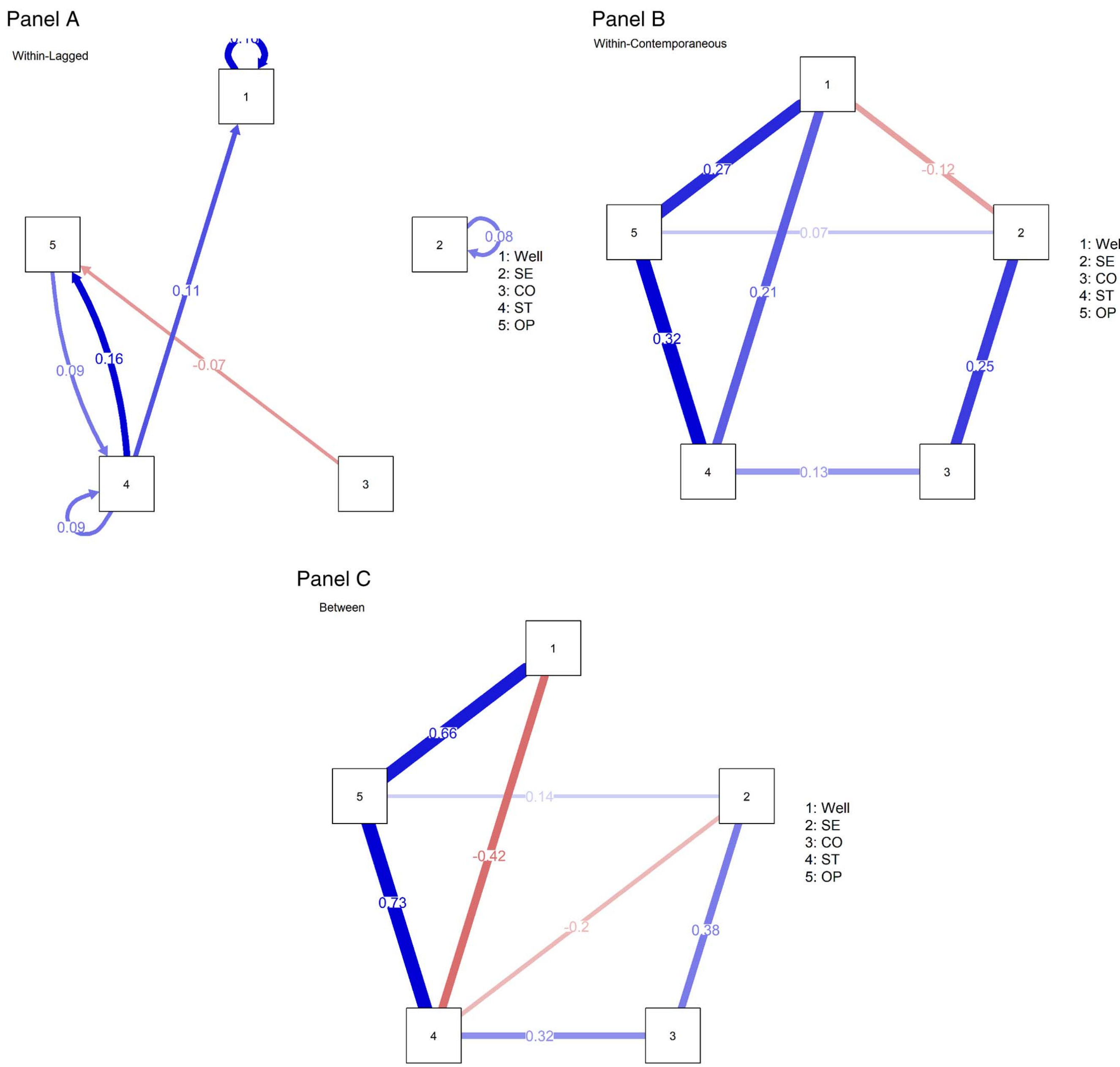
Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; RMSEA = root-mean-square error of approximation.

reinforced itself over time. Self-enhancement values ($r_{\text{partial directed}} = .08$) and self-transcendence values ($r_{\text{partial directed}} = .09$) also showed reinforcing autoregressive effects. Focusing on within-person lagged predictors of well-being, self-transcendence values had a positive effect on well-being over time ($r_{\text{partial directed}} = .11$). No other value was associated with well-being over time. Focusing on the value associations with each other, conservatism values decreased openness to change values ($r_{\text{partial directed}} = -.07$) over time. Self-transcendence and openness values were mutually reinforcing, with slightly weaker links from openness values to self-transcendence ($r_{\text{partial directed}} = .09$) than vice versa ($r_{\text{partial directed}} = .16$).

In the within-person contemporaneous network capturing average within-person dynamics at a given time point (the residual network after accounting for within-person lagged relationships, see Figure 3B), well-being showed strong positive associations with both openness to change values ($r_{\text{partial}} = .27$) and self-transcendence

Figure 3

Longitudinal Network Models



Note. Panel A: Within-person lagged network showing relations over time; Panel B: Within-person contemporaneous network showing relations within the average person, Panel C: Between-person network showing interindividual differences. Variable key: Well = well-being; *SE* = self-enhancement values; CO = conservatism values; ST = self-transcendence values; OP = openness to change values. See the online article for the color version of this figure.

values ($r_{\text{partial}} = .21$), but negative associations with self-enhancement values ($r_{\text{partial}} = -.12$). Focusing on the within-person contemporaneous value structures, we found only positive associations between values that are located in adjacent spaces with the theoretical value circle. Openness to change and self-transcendence values were strongly and positively associated ($r_{\text{partial}} = .32$). Self-transcendence values also shared some positive links with conservatism values ($r_{\text{partial}} = .13$). Self-enhancement values showed positive associations with conservatism values ($r_{\text{partial}} = .25$) and openness values ($r_{\text{partial}} = .07$).

Finally, focusing on the between-person associations (see Figure 3C), well-being was positively associated with openness to change values ($r_{\text{partial}} = .66$) but negatively with self-transcendence values ($r_{\text{partial}} = -.42$). Focusing on the value linkages with each other, self-transcendence and openness to change values were again strongly positively associated ($r_{\text{partial}} = .73$). Self-enhancement values again showed positive relations with conservatism values ($r_{\text{partial}} = .38$) and openness to change values ($r_{\text{partial}} = .14$), but showed theoretically expected negative associations with self-transcendence values ($r_{\text{partial}} = -.20$). Finally, conservatism and self-transcendence values were again positively related ($r_{\text{partial}} = .32$).

To directly compare the overall similarity of these network structures, we rotated each network using a multidimensional scaling (MDS) approach to examine the relative position of the nodes in each network. Using a MDS representation of the network, it is possible to interpret the primary axes and interpret the network structure in terms of previous value theory. In order to directly compare the results, it is necessary to rotate the MDS structures to maximal similarity (Fischer & Karl, 2019). We used the between-person network as the target matrix because the dimensional structure of value traits is best understood. Dimension 1 of this structure separated person-oriented from socially oriented values (with well-being being on the person-oriented value side). Dimension 2 separates growth and protection values. To examine the similarity of the underlying dimensions across networks, we used Procrustes rotation (Fischer & Karl, 2019) and calculated the degree of similarity after rotation to maximum similarity. The within-person lagged and between-matrix were substantially different along Dimension 1, but showed similarity along Dimension 2 ($\phi_1 = .01$, $\phi_2 = .97$), which differentiated values along the growth versus protection axis. The within-person contemporaneous and between-matrix substantially differed along both dimensions ($\phi_1 = .50$, $\phi_2 = .77$), implying that contemporaneous within- and between-person structures are statistically different. Finally, the within-person lagged and within-person contemporaneous matrix showed relatively higher similarity along Dimension 1 and substantial similarity on Dimension 2, but not identity ($\phi_1 = .85$, $\phi_2 = .95$).

Discussion

Separating temporally lagged trajectories within-person from contemporaneous within-person and between-person dynamics, we examined how values and well-being are related. First, the patterns across time and across levels differed, which implies that it is not possible to generalize about which values may be related to well-being and how. Both openness to change and self-transcendence values were related to well-being, but not consistently. Self-transcendence values even showed diverging patterns across levels, highlighting the complexity of this relationship. Second, the within-person lagged analysis indicated that previous self-transcendence value states are related to subsequent well-being, supporting a value-primacy perspective at least on a day-to-day trajectory within the time frame of our study. Third, focusing on between-person dynamics, self-transcendence values as socially oriented values showed a negative correlation with well-being, which is in line with some of the previous findings in European samples in regards to universalism values (Bobowik et al., 2011; Sortheix & Lönnqvist, 2014; Sortheix & Schwartz, 2017). Openness values showed positive relationships with well-being both at the within-person contemporaneous and between-person level, also replicating previous findings. Finally, focusing on value structures overall, our results suggest that the structure of contemporaneous within-person value states is distinct from the previously reported between-person level structures. We now discuss these findings in turn.

The Role of Self-Transcendence Values for Well-Being

Self-transcendence showed the most complex relationships with well-being. Across time, self-transcendence value states were associated with subsequent increases in well-being. Similarly, within individuals, we found the same positive relationship. These findings support a value-primacy perspective, highlighting that activation of values is associated with increases in well-being on the following day. Within the clinical and mental health literature, a large number of randomized controlled trials have demonstrated tangible positive effects of other-focused compassion, benevolence, and altruistic behavior on increasing well-being and decreasing stress and anxiety (Curry et al., 2018; Dickens, 2017; Fischer et al., 2020; Kirby et al., 2017). These findings are aligned with our findings for the within-individuals lagged and contemporaneous analyses. Individuals focusing on the health and well-being of others at the first time point will report higher well-being at the subsequent time point. Similarly, when individuals are focused on others in a specific situation and rate self-transcendence values as more important in the moment, they also report higher well-being. Focusing on the conceptually conflicting self-enhancement values, individuals reporting increased self-enhancement values within a specific situation also experienced decreased well-being. Putting these findings together suggest that seeking out situations that activate self-transcendence values may improve well-being.

Importantly, our within-person lagged analysis suggested that reporting situations in which these values were important for the individual were associated with subsequently increased well-being, pointing toward a temporal link from self-transcendence values to well-being. There has been a significant discussion of how values and well-being might be causally related. By studying the cross-temporal lagged changes in associations controlling individual differences, we found evidence that higher self-transcendence value states were associated with increased well-being at the subsequent time points that are not artifacts of baseline differences (Hamaker et al., 2015). This pattern is broadly aligned with theorizing across the social and biological sciences, including self-determination theory, postmodernization theory, and parasite-stress theory which highlight that altruistic and growth-oriented values likely facilitate greater well-being (Deci & Ryan, 2012; Inglehart, 2018; Ryan & Deci, 2001; Thornhill & Fincher, 2014; Welzel, 2013; Welzel &

Inglehart, 2010). Future research may want to study longer time-lag periods to examine the generalizability of these findings.

However, at the between-person level, we found that individuals who are more frequently concerned with the well-being of others during the study period reported lower well-being overall. Sortheix and Schwartz (2017) pointed out that socially focused values may decrease well-being because these values focus individuals to pay attention to the problems, needs, and expectations of others. This may then lead to increased worries about others close to oneself or to dissatisfaction with the status of marginalized individuals or groups within society more generally. Individuals emphasizing self-transcendence values may also coordinate their interests and desires with that of others, which may induce individuals to restrain or censure certain interests in order to maintain positive social relations. Our pattern of negative associations was observed at the between-person level, suggesting that individuals that more frequently report endorsing values that are other-focused also report lower well-being across situations. In other words, holding other values constant, those individuals that are more self-transcendent relative to their peers tend to report lower well-being. This pattern requires further attention.

One important avenue for future research is to consider social and cultural context effects. For example, previous studies suggested that the self-transcendence–well-being linkages are weaker in less egalitarian countries within Europe (Sortheix & Schwartz, 2017). Our study was conducted in NZ, which is relatively less egalitarian compared to Western and Northern European countries (Schwartz, 2006). More importantly, the study was conducted during the COVID-19 pandemic. Even though NZ at the time of the study was relatively safe with nonexistent community transmission, repeated lockdowns to control community transmission after border breaches were negatively affecting the population, and anxiety significantly increased compared to baselines prior to the pandemic (Gasteiger et al., 2021; Santomauro et al., 2021). In these situations, being consistently concerned about others may have increased worries and therefore, decreased personal well-being. As this effect was found only at the between-person level, it suggests individual difference dynamics in personality-like orientations, which have been shown to moderate the relationship between worries and values during the pandemic (Fischer, Bortolini, et al., 2021). This dissociation of within- and between-person level effects clearly needs further attention and replication in different social and epidemiological environments.

Openness Values and Well-Being

In our data, openness values are consistently related to well-being at the within-person contemporaneous and between-person level. This supports arguments by Sortheix and Schwartz (2017) that the endorsement of openness to change values allows the anxiety-free pursuit of autonomous goals and interests, which in turn leads to self-realization and increased well-being over time (Deci & Ryan, 2012). Being able to think and do what one desires as well as being free from concerns about protecting oneself from existential threats allows individuals to thrive and therefore experience higher levels of well-being. Our measure of well-being is supposed to capture both hedonic and eudemonic aspects of well-being (Tennant et al., 2007), suggesting that openness values are associated with both the emotional as well as meaning-making components of well-being. As this pattern was found at both the within-person contemporaneous and between-person levels, previously reported individual differences can be used to describe dynamics for individuals within specific situations and vice versa. This facilitates parsimony in theoretical predications and generalization of findings across levels of analysis (Chen et al., 2005). However, our findings currently suggest that pursuing openness to change values is not associated with further increases in well-being.

Value Dynamics Within and Between Individuals

Our results strongly suggest that within- and between-person value dynamics are distinct. The findings also imply value studies focusing on individual differences may not allow us to understand how values change over time. We studied value states, asking individuals to focus on the salient values within the last 15 min prior to answering the survey. The rotated dimensions suggest that the growth versus protection distinction encountered between individuals (the trait level) is relevant for understanding lagged value dynamics over time (as this dimension replicated at the within-person lagged level), but the person- versus social-orientation of values replicated more strongly between within-person contemporaneous and between-person levels. This theoretical distinction of growth versus protection values is conceptually related to core value dimensions that have been of interest to sociologists and political scientists studying societal-level value change (Fontaine et al., 2008; Inglehart & Baker, 2000; Welzel, 2013). It appears worth exploring whether this dimension is relevant for capturing lagged dynamics in general and how this dimension may align with individual-difference dynamics (Fischer, 2012).

We also found some alignment of within-person contemporaneous relationships with within-person lagged changes, which should be of interest for clinical analyses. Self-transcendence and openness values were mutually reinforcing, suggesting possible links of self-oriented values to socially oriented values that are both aligned with an expression of growth and pursuit of motivations that are relatively anxiety and threat-free, which may lead to a stabilization of postmodern values within a liberal democracy over time (Inglehart, 2018). Both self-transcendence and self-enhancement values were also found to reinforce themselves over subsequent days. Individuals who reported seeking achievement or power in a given situation or alternatively caring about others were likely to report those same values again on the next observation. But only self-transcendence values then linked to increased well-being on subsequent days. This is aligned with previous clinical intervention studies (Curry et al., 2018; Dickens, 2017; Fischer et al., 2020; Kirby et al., 2017).

Returning to the salience of motivational dimensions within the value space across levels, the person-oriented versus socially oriented values dimension was more clearly distinguishable and replicable across the within-person lagged and within-person contemporaneous level of analysis, but not when comparing within-person contemporaneous and between-person patterns. The previous study by Skimina et al. had reported greater alignment of the person- versus social-orientated value states across levels of analysis. Focusing on our patterns more holistically, in our study, we found consistent and positive relationships between openness to change values (a self-oriented value) with self-transcendence values (a socially oriented value) across levels.

These links were also mutually reinforcing: individuals reporting openness to change values in a specific situation reported greater self-transcendence values on a subsequent day and vice versa. At the same time, the socially oriented conservatism values decreased self-oriented openness values over time (at the within-person lagged level of analysis), but these two values were unrelated in the other two levels of analysis. Hence, the person versus social focus was more distinct and showed more complex patterns overall across levels in our sample. These lagged patterns are nevertheless in line with recently reported structural shifts, where benevolence values (as socially oriented value) started to emerge close to self-direction values (a person-oriented value; Schwartz et al., 2012). We strongly encourage further research that separates these three different levels of analysis to examine how the value structure is organized at each level and believe that a longitudinal analysis of value states has much to offer for a deeper understanding of values in general, in particular how distributions of value states may generate value traits (Fleeson, 2001).

Focusing on a few more specific patterns, within-person contemporaneous and between individuals, self-enhancement values showed positive associations with conservatism values. This may suggest that individuals who are more often pursuing advancing their own interests also pay attention to the social conditions, which allow them to both pursue and advance their own interests in line with the opportunities available within the social system. On the other hand, the goal conflict between self-enhancement and self-transcendence values proposed by the original values theory only clearly emerged at the between-person level of analysis in our sample, suggesting that this may reflect more stable altruistic-versus-egoistic personality differences that align values with personality dimensions (Fischer & Boer, 2015).

Limitations

A clear limitation is our reliance on a sample of young adults which was studied over a relatively short period. We asked individuals to report their values and well-being over a 6-day period. Therefore, we need more longer term studies that examine these linkages over time. Nevertheless, our studies are an improvement over previous cross-sectional studies in that we were able to demonstrate that (openness to change) values and well-being are consistently related to each across different levels of analysis. A second shortcoming is the low reliability for conservatism values. In our sample these two items did not strongly correlate with each other, suggesting that conservatism values in our study context show a more complex motivational core. This contrasts with the original analysis in Poland, where these two values showed high correlations which suggested a coherent set of conservative values. Since the instrument included security values that were asking about avoiding danger, this item may have taken on different connotations in the pandemic environment that are not necessarily linked to motivational concerns of conservatism values as proposed by the theory. This leads to a third important limitation, namely that the COVID-19 context may have impact psychological dynamics at a deeper level. There is some evidence that social dynamics shifted during the pandemic compared to prepandemic times and this clearly needs greater attention (Fischer & Karl, 2021). These various points also highlight a final limitation, which is the need to replicate these findings in different cultural settings. As highlighted in previous reviews of the value–well-being link (Boer, 2017; Heim et al., 2019; Sortheix & Lönnqvist, 2014; Sortheix & Schwartz, 2017), associations between these variables may be sensitive to situational, including cultural differences. Our contribution is to demonstrate that situational dynamics within the same cultural context matter. Future studies need to investigate how such situational influences that impact within-person dynamics scale up and vary across cultures.

Summary and Future Directions

A careful analysis of value states in relation to well-being suggests that values statistically predict subsequent well-being ratings. These dynamics were detectable even during a 6 day window in our study. Using a new network modeling approach, it becomes possible to differentiate these dynamics within-person both lagged and contemporaneously and at the between-person level. The analysis of such network structures has much potential to provide new insights into the psychological dynamics of motivation and well-being that are central to theory and application.

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