



Goal conflict and psychological well-being: A meta-analysis



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ABSTRACT

Goal conflict has long been an important aspect of motivation theories, but the results of research on the relationship between goal conflict and psychological well-being have been inconsistent. A meta-analytic review of the literature ($k = 54$) was conducted to examine this association. Higher levels of goal conflict are related to lower levels of positive psychological outcomes and greater psychological distress, though this relationship is stronger for distress outcomes. Other moderators that produced significant differences in effect sizes were whether a goal matrix was used to assess goal conflict, whether unipolar or bipolar assessment of goal conflict was used, and whether adult or student samples were studied. This meta-analysis provides evidence that goal conflict has a negative association with psychological well-being.

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1. Introduction

The pursuit of personal goals can lead to a psychologically fulfilling life by providing meaning and structure to one's activities and identity. The sustained pursuit of meaningful goals has been associated with increases in psychological well-being (Koestner, Lekes, Powers, & Chicoine, 2002; Sheldon & Houser-Marko, 2001). Goal setting and pursuit have also been associated with increased school performance (Covington, 2000), work performance (Locke & Latham, 2006), and increased physical well-being (Emmons, 2003). Setting personal goals serves to identify what is important to the individual and what outcomes are desirable and undesirable to pursue (Emmons, 2003). Problems can arise, however, when an individual holds multiple goals at the same time. When two goals lead to incommensurate outcomes or compete for the same resources, goal conflict arises.

Goal conflict is present when the pursuit of one valued goal hinders the pursuit of another valued goal (Austin & Vancouver, 1996). Despite their theoretical differences, Maslow (1954, 1943), Lewin (1935), Hull (1938), and Freud (1962) all implicate goal conflict as having negative psychological implications. Modern theories of motivation also include goal conflict as a potential source of psychological strain (Carver & Scheier, 1982; DeYoung, 2015; McNaughton & Gray, 2000). Despite a clear theoretical consensus regarding the effects of goal conflict on psychological well-being, there have been contradictory and inconsistent findings in the lit-

erature and thus a quantitative review of the association between goal conflict and psychological well-being is warranted.

Goal conflict can arise for a number of reasons. Some goals conflict because simultaneous pursuit of both goals involve incompatible strategies (Segerstrom & Nes, 2006; Wilensky, 1983). Such goals as "Be more assertive" and "Be well-liked" may be incompatible, as making progress towards one of these goals typically undermines progress toward the other (Boudreaux & Ozer, 2013). This inherent goal conflict should be distinguished from other forms of goal conflict that may arise because resources are finite and the individual must choose which goal to pursue and which goal to set aside (Segerstrom & Nes, 2006). Resource conflict arises even when goals are not necessarily incompatible, but draw on the same finite resources. Goals such as "Get ahead at work" and "Spend more time with my kids" are not inherently incompatible but both require significant amounts of time to be achieved.

Goal conflict hinders the ability to pursue goals because the pursuit of one goal comes at the expense of another goal. Inhibited goal progress in turn is associated with decreased psychological well-being (Sheldon, Jose, Kashdan, & Jarden, 2015). Previous research has found that higher levels of goal conflict are associated with increased rumination about goals, more inhibited goal pursuit, and decreased goal progress (Boudreaux & Ozer, 2013; Cantor, Acker, & Cook-Flannagan, 1992; Kleiman & Hassin, 2011). Boudreaux and Ozer (2013) argue that the decreased goal progress associated with goal conflict should lead to increases in psychological distress, and may serve as a call to modify one's goals or strategies.

Goal conflict may be resolved in at least three different ways (Wilensky, 1983). Goal conflict resolution may occur if the

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individual finds a way to achieve both conflicting goals. If goal conflict cannot be resolved in this fashion, the individual may opt to partially or fully abandon one of the conflicting goals. The emphasis on a focal goal can help to direct attention towards the goal that is most valued (Kruglanski et al., 2013). Finally, goal conflict may also be resolved spontaneously by an external circumstance (Wilensky, 1983). The manner in which goal conflict is resolved may in part depend on the circumstances giving rise to the conflict (e.g. inherent or resource conflict).

The empirical picture concerning the relationship between goal conflict and psychological well-being is less clear. Multiple studies have found that increased goal conflict is associated with greater psychological distress, and lower psychological well-being (e.g. Boudreaux & Ozer, 2013; Emmons & King, 1988). Other studies have failed to detect a relationship between goal conflict and well-being (e.g. Kelly, Mansell, & Wood, 2011). Despite the mixed empirical picture, previous theoretical work has suggested that goal conflict should be associated with lower levels of psychological well-being (Michalak, Heidenreich, & Hoyer, 2011) and so we expect to find goal conflict to be negatively related to positive psychological outcomes, and to be positively associated with negative psychological outcomes.

1.1. Psychological well-being and distress

Costa and McCrae (1980) argue that well-being is not a unitary concept, but is composed of both positive and negative aspects. Past research has identified that the positive aspects of psychological well-being (e.g. satisfaction with life) are only moderately related to the negative components of well-being, such as depression (Diener, Suh, Lucas, & Smith, 1999; Pavot & Diener, 1993). These two components of psychological well-being have been differentially predicted in the past by various aspects of personality. Negative aspects of well-being tend to be related to the personality trait of neuroticism, whereas the positive components are more often related to extraversion (Costa & McCrae, 1980; Steel, Schmidt, & Shultz, 2008).

The finding that different variables predict the positive and negative components of well-being is also evident in the goal conflict and pursuit literature. Emmons and King (1988) reported a significant association between goal conflict and negative affect, but found no relationship between goal conflict and positive affect. The opposite was found by Freitas, Clark, Kim, and Levy (2009) who reported goal conflict was significantly associated with positive affect but not negative affect. A recent meta-analysis on goal pursuit and well-being treated positive psychological outcomes and psychological distress as distinct outcomes and found goal progress was more strongly related to positive psychological outcomes than to distress outcomes (Klug & Maier, 2015). The current meta-analysis seeks to reconcile disparate findings regarding whether goal conflict is more strongly associated with well-being or psychological distress. Because of this distinction between distress and positive facets of well-being, the authors will refer to well-being as the global assessment, while distress and positive outcomes will be used to refer to the more specific aspects of well-being.

1.2. Assessment of goal conflict

Different assessment techniques have been developed for the measurement of goal conflict. The most popular method has been the matrix technique of assessing goal conflict (e.g. Emmons & King, 1988). This method consists of eliciting personal goals from a participant in an open-ended fashion. A matrix is then created so that each goal is paired with every other goal. The participant is then asked to rate the extent to which the pursuit of one goal

makes it easier or more difficult to pursue the paired goal. Scores from these responses are then aggregated to create an overall conflict rating. This method is well suited to assessing conflict among idiographically assessed conscious goals.

Another commonly used technique of goal conflict assessment is the Repertory Grid Technique (RGT; Slade & Sheehan, 1979). The RGT is derived from personal construct theory and is used as a method of assessing intrapsychic conflict (Kelly, 1955). The Repertory Grid Technique begins with three psychological concepts that are important or relevant to the participant, with one these concepts representing the self (e.g. “Myself” or “My ideal self”). The researcher then asks the participant to evaluate the relationship (positive or negative) between concepts in each of the three pairings of the three concepts. Conflict is present when the participant reports that either one or three of the perceived relationships are negative. One particular aspect of the RGT that is of interest when considering goal conflict is the implicative dilemma. Implicative dilemmas in the RGT occur when positive progress made in one construct threatens progress in another (Feixas, Saúl, & Ávila-Espada, 2009). Slade and Sheehan (1979) provide the example triad of “myself”, “parties”, and “depression”, where the method would identify conflict in a person who likes parties, states that parties increase the experience of depression, and that the depression is unwanted and disliked. Implicative dilemmas have been used as measures of motivational conflict for general life goals in clinical populations as well as healthy populations.

The final widely used tool for the measurement of goal conflict is the Computerized Intrapersonal Conflict Assessment (CICA; Lauterbach, 1996) which measures perceived inconsistency among psychological concepts. The CICA is used by giving the participant a set of three psychological concepts, similar to the three concepts used with the RGT (such as “Myself”, “Success at work”, and “Leisure time”; Michalak et al., 2011). The individual then rates the degree to which the concepts are important to oneself (e.g. the degree to which “Success at work” and “Leisure time” are important to the participant). Perceived conflict is assessed by asking the participant the extent to which the pursuit of each concept has a positive or negative effect on the ability to pursue the other concepts (e.g., more success at work means less leisure time). The CICA has also been used with values and beliefs in measuring conflicting groups of concepts, but our interest here is CICA methods that involve goals (Lauterbach & Newman, 1999). An example of this method in predicting clinical outcomes is presented in Renner and Leibetseder (2000) who reported that individuals high in conflict presented greater levels of somatization, depression and anxiety.

The diverse methods that have been used in goal conflict research have created challenges when comparing results across studies (Kelly, Mansell, & Wood, 2015). These methods differ mainly in the manner goals are assessed. In matrix approaches, goals are assessed by asking participants list their important goals. In contrast, both the CICA and the RGT methods use goals supplied by the researcher. Once the goals are established, goal conflict is similarly assessed in each method. One cause for concern is the low correlation of $r = 0.07$ between the matrix assessment of conflict and the CICA, suggesting that these two forms of measurement are assessing different constructs and cannot be used interchangeably (Michalak et al., 2011). For this reason, the method of assessment has been included as a moderator of the relationship between goal conflict and psychological well-being.

1.3. Goal conflict: bipolar or unipolar scales?

Early research on goal conflict assumed that goal conflict and goal facilitation were bipolar opposites. Many initial studies using goal matrices used bipolar measurements, with one end of the

scale representing goal conflict and the other end representing goal facilitation. Conflict and facilitation may intuitively seem to exclude each other, however as Riediger (2007) points out, goals may hinder each other in one situation but facilitate the pursuit of each other in another situation. Michalak et al. (2011) note that the levels of conflict reported using a bipolar assessment technique are often skewed towards points on the scale that represent facilitation rather than conflict. This skew often precludes a clear interpretation of the instrument as assessing goal conflict. As Michalak et al. (2011) argue, the low scores of conflict on a bipolar scale may indicate that the measure is actually assessing the degree of integration among goals, rather than conflict itself. The interpretability of the mid-point of a bipolar assessment technique is problematic as well. A mid-point score on a bipolar scale can suggest that two goals share no relationship, or that two goals conflict and facilitate equally (Riediger, 2007). Bipolar assessment methods confound low levels of facilitation with high levels of conflict (and vice versa).

Riediger and Freund (2004) reported a nonsignificant correlation between goal conflict and facilitation, with various aspects of conflict and facilitation loading onto two distinct factors. They also reported that conflict and facilitation predict different outcomes. Goal conflict was associated with higher levels of negative affect and lower levels of positive affect, but goal facilitation did not predict well-being outcomes independent of conflict. Somewhat similar results were reported by Boudreaux and Ozer (2013) in which goal conflict was significantly correlated only with psychological distress (i.e. negative affect), and goal facilitation was correlated only with positive affect. Goal conflict and goal facilitation appear to be best modeled as distinct constructs. This conceptual distinction between goal conflict and facilitation led to another research question of whether the polarity of goal conflict assessment would moderate the relationship between goal conflict and well-being.

1.4. Sample characteristics and goal conflict

Goal pursuit develops throughout the lifespan, with control over the success of goal pursuit changing as one ages (Schulz & Heckhausen, 1996). Normative goal content changes over time as well, and different life stages may be more or less characterized by goal conflict. Older individuals tend to report less goal conflict than do younger participants (Riediger, Freund, & Baltes, 2005). Rather than setting and pursuing goals in isolation, it is hypothesized that older individuals tend to frame goals in ways that are more compatible with other goals (Riediger et al., 2005).

Age may then be a moderator of the association between goal conflict and psychological well-being. Older individuals tend to have greater freedom and access to resources which helps decrease the likelihood of experiencing resource conflict. The ability to create plans to deal with conflicting goals may also develop with age. This may be in the form of multifinal means to achieving goals, where multiple goals are attained through a single course of action (Köpetz, Faber, Fishbach, & Kruglanski, 2011). This freedom of goal pursuit leads to the expectation that adults will show a reduced association between goal conflict and well-being outcomes.

The presence of goal conflict in clinical populations has also been examined. Feixas, Montesano, Compañ, et al. (2014) and Feixas, Montesano, Erazo-Cacedo, et al. (2014) found that patients diagnosed with depression reported greater amounts of conflict than did a healthy comparison group; and among members of the group with depression the number of conflicts reported was correlated positively with symptom severity. Montesano et al. (2014) compared dysthymic patients to a control group of psychologically healthy patients. The correlation between cognitive conflict and symptoms of depression was greater in the dysthymic group than in the relatively healthy control group. This preliminary

evidence suggests that the association between goal conflict and psychological distress may be stronger in clinical populations. This question is related to our final moderator hypothesis: Whether studies that include clinical samples will show a larger relationship between goal conflict and psychological distress.

1.5. Present study

The inconsistent findings of whether goal conflict is related to psychological well-being provided the rationale for this quantitative review. To integrate the literature examining goal conflict and psychological well-being two separate meta-analyses were conducted: One to examine goal conflict's association with psychological distress and another to examine the relationship between goal conflict and positive psychological outcomes. The results of these meta-analyses were then compared to evaluate whether the relationship with goal conflict was stronger for psychological distress or for positive psychological outcomes. Within each of the meta-analyses moderation analyses included assessing: the technique of goal conflict assessment, whether bipolar or unipolar goal conflict scales were used, use of adult or undergraduate samples, and whether samples were drawn from general or clinical populations. Results of the moderation analysis may help to explain the disparate findings in the research literature.

2. Method

2.1. Literature searches and inclusion criteria

Relevant studies were located using three primary techniques. Studies regarding the relationship between goal conflict and psychological well-being were initially identified using PsycINFO and Google Scholar databases with the search terms “goal”, “striving”, “plan”, “motivation”, and “intrapersonal” all paired with “conflict.” These terms were then included in a search with “psychological well-being,” “satisfaction with life,” “psychological distress,” and “depression.” After procuring a preliminary list of studies, additional articles were located by reviewing the reference lists of obtained articles, and locating articles citing the original entries. A request was also sent to the open forum for the Society for Personality and Social Psychology asking for unpublished manuscripts that examined goal conflict and psychological well-being in an attempt to obtain studies that have not been published.

Four criteria were used to determine whether a study would be included in the analysis. The first criterion was that the study must have assessed both goal conflict using important life goals and outcomes across different domains. Studies were considered as measuring important life goals if they had measured relatively long term goals, or asked participants for characteristic life goals. This criterion excluded studies that assessed outcomes within specific domains, such as work satisfaction. Domain specific outcomes were excluded because well-being is conceptualized as a general outcome of interest rather than restricted to one domain (Diener et al., 1999). The second criterion was that the outcome variable was related to psychological well-being rather than physical well-being, such as hospital visits or immune functioning. The third criterion required that the study assess and report associations specifically involving goal conflict. Studies that reported only correlates of goal facilitation, or other aspects of inter-goal relations were not included. Studies that used bipolar assessment of goal conflict are noted, and effect sizes were occasionally reversed in sign so the results would be aligned with an interpretation of conflict rather than facilitation. The fourth inclusion criterion was that goal conflict was assessed at an individual level in order to

exclude studies that examined goal conflict between people (e.g. interpersonal goal conflict assessed dyadically).

These criteria yielded 54 independent samples, with some articles including multiple studies, as well as multiple outcomes associated with goal conflict. A total of 50 articles (including five dissertations) were used in the analysis. Among studies that reported multiple samples, the samples were independent of one another. After aggregation (see below) the total number of effect sizes associated with goal conflict included in the analyses is 74; 42 effect sizes related to psychological distress and 32 related to positive psychological outcomes (see Table 1). The non-independence of the two outcomes raised an analytic challenge that will be addressed below.

2.2. Well-being outcomes

Assessing whether the valence of outcome moderated the relationship between goal conflict and well-being raised a data analytic challenge. This question could not be addressed using typical moderation analyses as several studies reported both positive psychological and distress variables as outcomes, raising the issue of nonindependence. Our solution was to separate studies which reported only one aspect of well-being as an outcome from those studies which reported effect sizes for both distress and positive variables as outcomes. For studies reporting either distress or positive outcomes alone a traditional moderation analysis was used which compared the correlations of goal conflict with positive and negative outcomes. Among studies that reported multiple measures of either positive outcomes or distress outcomes the largest difference between correlations was chosen and ensemble adjusted p -values (Rosenthal & Rubin, 1983) were used to evaluate the difference between them. This involved first choosing the two correlations that would yield the largest (and most significant) difference. A p -value was obtained for this difference between correlations, and then multiplied by the number of possible comparisons in that study. If there were six possible comparisons between positive outcomes and distress, the largest difference between correlations would be chosen and the p -value for that comparison and then multiplied by six. This p -value was then converted into a z -score for each study. The z -score for this adjusted p -value were then aggregated with other z -scores obtained in this manner and combined with results from the analysis on the independent effect sizes and studies reporting one effect size for each outcome mentioned above.

Several studies reported multiple dependent variables related to the either positive outcomes being or psychological distress. For instance, Emmons and King (1988) reported depression, negative affect, and anxiety for psychological distress measures, as well as positive affect and the well-being facet of the Differential Personality Questionnaire to assess positive outcomes. One possible method of aggregation is to combine these effect sizes using the mean of these correlations. This solution is unsatisfying as it leaves out unique information provided by the use of multiple outcomes (Lucas & Fujita, 2000; Marín-Martínez & Sánchez-Meca, 1999). An alternative approach, based on the logic suggested by Rosenthal and Rubin (1986), was employed to combine correlated effect sizes.¹

¹ The formula used was $Combined\ Zr = \sum \frac{Zr}{\sqrt{\rho m^2 + (1-\rho)m}}$, where Zr represents the Fisher's r -to- Z transformation of the correlation between goal conflict and the outcome, ρ is the average intercorrelation among outcomes, and m is the number of outcomes in the aggregation. This method incorporates the average of the correlation between outcome measures and adjusts the aggregated effect size to account for higher or lower collinearity in outcome measures. Apparent in this equation is that the adjustment will be larger with a weaker correlation among outcomes.

2.3. Additional moderator variables

In addition to assessing whether the outcome measured a positive outcome or psychological distress, characteristics of the measurement method and the sample were assessed as moderators. The measurement characteristics used as moderators were whether the study used a measure of goal conflict that was bipolar or unipolar, and whether the study used a matrix format of assessment. Characteristics of the sample assessed as moderators included age (undergraduate or adolescent samples vs. older samples) and whether the sample was drawn from a clinical population. Moderators were assessed separately for studies using positive and distress outcomes. The analysis of moderators was conducted using a fixed effects approach for comparing correlations across samples (Rosenthal, 1991).

3. Results

3.1. Study characteristics

The literature search returned a total of 54 independent samples (total $N = 12,470$) that were included in the analysis. A total of 42 ($N = 10,735$) independent samples were found that examined the relationship between goal conflict and variables assessing psychological distress. Thirty-two ($N = 7628$) independent samples were included that examined the association between goal conflict and positive psychological outcomes. A total of 21 samples included both positive and psychological distress outcomes. Table 1 shows the authors, effect sizes, and p -values for each study included in the analysis.

Table 1 shows the values for the weighted (by sample size) and unweighted mean effect sizes (in r). There were significant relationships between goal conflict and both distress and positive outcomes. The median unweighted effect size for goal conflict and negative functioning is $r = 0.24$, the median weighted effect size is $r = 0.34$. The median unweighted effect size of goal conflict on positive psychological functioning was $r = -0.17$, the weighted median correlation was $r = -0.26$.

Funnel plots showing the study effect size plotted against the study standard error are presented in Figs. 1 and 2. Both funnel plots used the null effect size of $r = 0.00$ as a reference point, with the confidence intervals around zero of 90, 95, and 99%. Both Figs. 1 and 2 demonstrate a mean effect that clearly deviates from zero. Tests for funnel plot asymmetry around the mean effect were conducted using a rank correlation test (Begg & Mazumdar, 1994; Sterne et al., 2011). Follow up tests of funnel plot asymmetry found no significant publication bias among the psychological distress variables ($z = 0.60$, $p = 0.55$). Fig. 2 shows a more likely case of publication bias, as there appears to be asymmetry around the mean in the funnel plot for positive psychological outcomes. The rank correlation test was marginally significant in detecting publication bias in positive outcomes ($z = -1.74$, $p = 0.082$). Given the relatively low power of the rank correlation test (Sterne et al., 2011), this p -value is low enough to warrant an interpretation that some publication bias is present. It should be noted that the direction of the bias is such that the studies with the smallest standard errors (i.e. Pomaki, Maes, & ter Doest, 2004) coincide with some of the larger effect sizes. This implies that if publication bias is present, that effect sizes would actually be underestimated, contrary to the typical direction of a publication bias effect. When the Pomaki et al. (2004) study is dropped from the analysis, the rank correlation is no longer significant ($z = -0.82$, $p = 0.41$).² The number of points

² Both the linear regression (Egger, Smith, Schneider, & Minder, 1997) and the method of moments (Thompson & Sharp, 1999) also showed non-significant publication bias effects once the Pomaki et al. (2004) study was dropped.

Table 1
Goal conflict and well-being outcomes.

Study	Method of assessment	Positive <i>r</i>	Positive <i>p</i> -value	Distress <i>r</i>	Distress <i>p</i> -value	<i>N</i>	Special Characteristics
Palys and Little (1983)	10 × 10 Project conflict matrix	−0.58	2.12 × 10 ^{−17}	–	–	178	Undergraduate sample, bipolar
Emmons (1986)	15 × 15 Striving conflict, matrix assessment	−0.28	0.080	0.33	0.038	40	Undergraduate sample, bipolar
Emmons and King (1988) (sample one)	15 × 15 Striving conflict, matrix assessment	−0.16	0.32	0.35	0.026	40	Sample is undergraduates, bipolar
Emmons and King (1988) (sample two)	15 × 15 Striving conflict, matrix assessment	−0.15	0.30	0.35	0.015	48	Sample is undergraduates, bipolar
Perring, Oatley, and Smith (1988)	Single item conflict measure	–	–	0.25	0.00016	224	Sample across adults and students, unipolar
Lauterbach (1990)	CICA	–	–	0.44	2.45 × 10 ^{−8}	147	Student and adult sample, unipolar
Cantor et al. (1992)	Unipolar conflict rating	−0.27	0.058	0.30	0.034	50	Student sample, unipolar
Lecci, Okun, and Karoly (1994)	Plan conflict, matrix assessment	−0.16	0.068	–	–	130	Undergraduate sample, bipolar
Pychyl (1995)	Unipolar Time conflict, matrix assessment	0.01	0.92	0.18	0.11	81	Graduate student sample, unipolar, time conflict
Sheldon and Kasser (1995)	10 × 10 Matrix assessment	−0.08	0.32	0.03	0.70	161	Undergraduate sample, bipolar
Colby (1996)	Striving conflict, matrix assessment	−0.24	0.011	–	–	113	Undergraduate sample, bipolar
Lauterbach (1996)	CICA	–	–	0.46	0.0000028	95	Adult sample, unipolar
Karoly and Ruehlman (1996)	Conflict between work and non-work goals	–	–	0.21	0.00015	227	Sample is adults, unipolar
King, Richards, and Stemmerich (1998)	15 × 15 Striving conflict, matrix assessment	−0.05	0.66	0.10	0.38	80	Sample is undergraduates, bipolar
Renner and Leibetseder (2000)	CICA	–	–	0.32	0.00012	139	Part clinical sample, unipolar, adult sample
Wallenius (2000)	8 × 8 project conflict, matrix assessment	−0.06	0.44	0.07	0.36	167	Adult sample, bipolar
Hoyer, Fecht, Lauterbach, and Schneider (2001)	CICA	−0.63	1.03 × 10 ^{−11}	0.33	0.0012	94	Sample with alcoholism, adult sample, unipolar
Kökönyei, Reinhardt, Pajkossy, Kiss, and Demetrovics (2008)	Striving conflict, matrix assessment	0.15	0.31	–	–	48	Half undergraduate, half adult sample, unipolar
Senécal, Vallerand, and Guay (2001)	Work-Family goal conflict	–	–	0.53	3.71 × 10 ^{−58}	786	Conflict between work-family goals, Adult sample, unipolar
Sandberg (2002)	15 × 15 Striving conflict, matrix assessment	−0.06	0.50	−0.07	0.44	123	Student and adult sample, bipolar
Kehr (2003)	6 × 6 Striving conflict, matrix assessment	−0.19	0.058	0.22	0.028	99	Adult sample, bipolar
Riediger and Freund (2004)	4 × 4 Striving interference, matrix assessment	−0.30	0.0014	0.43	0.0000026	111	Adult sample, unipolar
Pomaki et al. (2004)	Work goal conflict	−0.36	3.84 × 10 ^{−95}	0.45	7.44 × 10 ^{−154}	3088	Adult sample, unipolar
Ratelle, Senécal, Vallerand, and Provencher (2005)	Conflict between leisure and academic goals	−0.22	1.18 × 10 ^{−8}	0.14	0.00032	658	Undergraduate sample, unipolar
Boersma, Maes, Joeke, and Dusseldorp (2006)	Conflict between goal domains	−0.26	0.074	–	–	48	Heart attack patients, unipolar
Seegerstrom and Nes (2006)	Resource conflict	–	–	0.08	0.48	79	Sample is undergraduates, unipolar
Stangier, Ukrow, Schermelleh-Engel, Grabe, and Lauterbach (2006)	Approval and idealization conflict	–	–	0.43	0.000096	77	Adult sample, part of sample was clinically depressed
Feixas, Erazo-Caicedo, Harter, and Bach (2008)	Repertory Grid Technique	–	–	0.37	9.4 × 10 ^{−15}	410	Comparison between depressed and healthy, adult sample, unipolar
Leibowitz-Levy (2008)	Striving matrix, bipolar assessment	0.05	0.56	0.13	0.013	138	Undergraduate sample, bipolar
Karoly, Okun, Ruehlman, and Pugliese (2008)	3 × 3 goal matrix	–	–	0.36	0.00024	100	Adult sample with back pain, unipolar
Riediger and Freund (2008) (Sample One)	Momentary assessment of conflict	−0.28	0.01	–	–	81	Both undergraduate and adult sample, unipolar
Riediger and Freund (2008) (Sample Two)	Presence of conflict	−0.31	0.01	–	–	63	Adult sample, unipolar
Feixas et al. (2009)	Repertory Grid Technique	–	–	0.34	7.02 × 10 ^{−18}	606	Healthy and clinical, adult sample
Freitas et al. (2009)	10 × 10 matrix, Bipolar goal concordance	−0.32	0.0019	0.09	0.40	91	Undergraduate sample, bipolar
Romero, Villar, Luengo, and Gómez-Fraguela (2009)	15 × 15 matrix, Bipolar goal instrumentality	−0.07	0.16	−0.01	0.84	405	Mix of undergraduates and adult sample, bipolar
van Dierendonck, Rodríguez-Carvajal, Moreno-Jiménez, and Dijkstra (2009)	4 × 4 Goal integration matrix	−0.11	0.042	–	–	342	Undergraduate sample, bipolar
Dickson and Moberly (2010)	Mean number of goals = 7.2, matrix	–	–	0.40	0.0000066	119	Non-undergraduate adolescent sample, Bipolar

(continued on next page)

Table 1 (continued)

Study	Method of assessment	Positive <i>r</i>	Positive <i>p</i> -value	Distress <i>r</i>	Distress <i>p</i> -value	<i>N</i>	Special Characteristics
Gore and Cross (2010)	7 × 7 Bipolar matrix assessment	−0.01	0.90	–	–	166	Undergraduate sample, bipolar
Bailis et al. (2011) (sample one)	Goal conflict manipulation	–	–	0.20	0.030	117	Undergraduate sample, goal conflict manipulated
Bailis et al. (2011) (sample two)	Goal conflict manipulation	–	–	0.16	0.094	111	Undergraduate sample, goal conflict manipulation
Kelly et al. (2011)	10 × 10 matrix, Bipolar goal conflict	–	–	−0.11	0.23	120	Undergraduate sample, bipolar
Badzinski and Anderson (2012)	Repertory Grid Technique	–	–	0.10	0.23	147	Undergraduate, implicative dilemma ratio
Ribeiro, Feixas, Maia, Senra, and Dada (2012)	Repertory Grid Technique	–	–	0.14	0.48	28	Assessment is presence of implicative dilemmas, undergraduate
Boudreaux and Ozer (2013)	8 × 8 Striving conflict, matrix assessment	−0.04	0.62	0.21	0.0086	155	Undergraduate sample, unipolar
Stauner (2013)	Striving conflict, matrix assessment	−0.17	0.0074	–	–	247	Undergraduate sample, bipolar
Hofmann, Luhmann, Fisher, Vohs, and Baumeister (2014)	Desire-goal conflict	0.01	0.88	0.41	1.03 × 10 ^{−09}	205	Adult sample, unipolar
Feixas et al. (2014)	Repertory Grid Technique	–	–	0.20	0.0030	219	Comparison between depression and healthy, adult sample, unipolar
Feixas, Montesano, Compañ, et al. (2014) and Feixas, Montesano, Erazo-Caicedo, et al. (2014)	Repertory Grid Technique	–	–	0.32	0.000074	148	Comparison between depression and healthy, unipolar, adult sample
Grund and Fries (2014)	Tendency for motivation interference while studying	−0.17	0.0067	–	–	253	Undergraduate sample, Conflict between domains, unipolar
Montesano et al. (2014)	Repertory Grid Technique	–	–	0.17	0.000069	542	Comparison of clinical dysthymia patients and healthy adults, unipolar
Williams, Guerin, and Fortier (2014)	Conflict between leisure goals	−0.34	0.0051	–	–	66	Sample is adult females, conflict between leisure, unipolar
Grund, Grunschel, Bruhn, and Fries (2015)	“Want Conflict” and “Should” Goals	−0.17	0.20	0.20	0.12	58	Conflict only between want goals, undergraduate sample, unipolar
Bailis (unpublished manuscript)	Conflict among exercise goals	–	–	0.24	0.00058	202	Unipolar, undergraduate sample
Segerstrom, Jones, Scott, and Crofford (2016)	Daily rating of conflict	–	–	0.07	0.32	200	Unipolar, adults with fibromyalgia
Unweighted average		−0.18	0.0000029	0.24	1.04 × 10 ^{−11}		<i>k</i> = 32 for positive outcomes, <i>k</i> = 42 for distress outcomes
Weighted average		[−0.23, −0.13]	2.98 × 10 ^{−46}	[0.20, 0.28]	1.91 × 10 ^{−107}		<i>N</i> = 7628 for positive outcomes, <i>N</i> = 10,735 for distress outcomes

Note. Total *k* = 54. All *p* values are two-tailed.

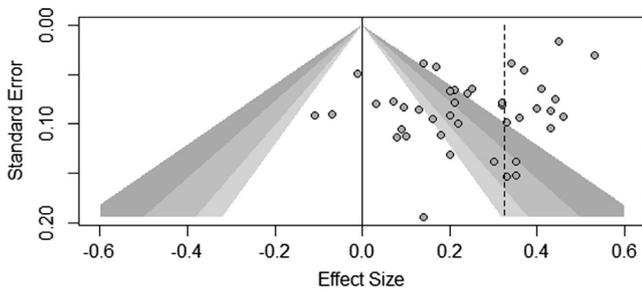


Fig. 1. Funnel plot of psychological distress effect sizes and standard error. Note. All effect sizes are correlations. $k = 42$. 90% CI in light gray, 95% CI in medium gray, 99% CI in dark gray. Reference lines are at $r = 0.0$ and at the weighted mean effect size.

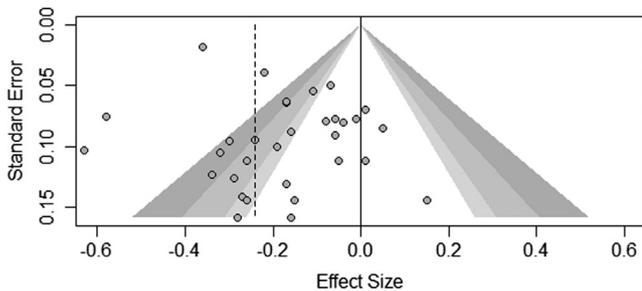


Fig. 2. Funnel plot of positive outcome effect sizes and standard error. Note. All effect sizes are in correlations. $k = 32$. 90% CI in light gray, 95% CI in medium gray, 99% CI in dark gray. Reference lines are at $r = 0.0$ and at the weighted mean effect size.

lying outside the funnel indicate that there may significant heterogeneity in effect sizes present (see below).

3.2. Tests of moderation

Tests of heterogeneity revealed that effect sizes differed for both distress ($\chi^2(41) = 333.82, p = 1.48 \times 10^{-47}$) and positive outcomes ($\chi^2(31) = 223.64, p = 4.74 \times 10^{-31}$) outcomes. For psychological distress, the correlations range from $r = -0.11$ to $r = 0.53$, with a standard deviation of 0.15. The effect sizes for positive outcomes ranged from $r = -0.58$ to $r = -0.01$, with a standard deviation of 0.16. These results suggest that there are moderators operating for both outcomes. The first test of moderation performed was to assess whether goal conflict had differential associations with positive psychological outcomes versus distress.

Using the methodology of ensemble adjusted p -values, positive and negative outcomes were assessed for moderation. The samples utilizing positive outcome measures reported larger effect sizes than those using psychological distress outcome variables ($z = 2.68, p = 0.0074$). In those studies where both types of outcome measures were used, the combined ensemble-adjusted p -values yielded a total z -score for nonindependent samples of $z = 2.56, p = 0.010$. These two z -values were then aggregated using the fixed effects formula (Rosenthal, 1991) to yield a z -value of 3.71 ($p = 0.00021$). This result indicates that across all samples, goal conflict has a stronger association with distress outcomes than with positive outcomes.

Table 2 shows the relationships between the moderators of distress and positive outcomes. There was a tendency for studies that employed unipolar assessment methods to also use assessment methods that were not goal conflict matrices. Studies that used adult samples also tended to use clinical samples. These correlations among the moderators are not so high as to render them redundant.

Table 2
Correlations among moderators for both distress and positive outcomes.

	Matrix	Bipolar	Adult
<i>Distress outcomes</i>			
Bipolar	-0.37**		
Adult	-0.27	0.13	
Clinical	-0.33	0.14	0.40**
<i>Positive outcomes</i>			
Bipolar	-0.34		
Adult	-0.35	0.28	
Clinical	-	-	-

Note. $k = 42$ for distress outcomes, $k = 32$ for positive outcomes.

** $p < .01$.

The method of assessment was considered as a moderator by comparing studies that utilized a goal matrix with those studies that measured goal conflict using another method.³ Among samples reporting negative outcomes, 25 samples used a technique other than a goal matrix and 17 samples used a matrix to measure goal conflict. Alternative forms of assessment yielded significantly larger effect sizes than did matrix methods of assessing goal conflict ($r = 0.28$ and $r = 0.18$ respectively, $z = 3.09, p = 0.0020$). For samples reporting positive outcomes, ten studies reported using some alternative form of conflict measurement, 22 studies used a matrix to assess goal conflict. Similar to the results for distress, effect sizes for positive outcomes were greater for alternative forms of assessing goal conflict compared to matrix assessment ($r = -0.27$ and $r = -0.13$ respectively, $z = 4.59, p = 0.000044$). Among the studies sampled, alternate forms of goal conflict measurement reported a significantly larger association between goal conflict and well-being than studies using a goal conflict matrix.

Polarity was included as a moderator by comparing studies that used bipolar methods of assessment to studies reporting unipolar assessment techniques. Among the studies reporting a distress outcome, 23 samples were assessed using unipolar measures and 16 samples were assessed with a bipolar measure. Three studies did not report sufficient information to determine polarity. Effect sizes for negative outcomes that reported using a unipolar technique were on average larger than the effect sizes reported with bipolar assessment ($r = 0.27$ and $r = 0.19$ respectively, $z = 2.32, p = 0.020$). Among the 32 samples used in analyzing positive outcomes, 17 assessed goal conflict with a bipolar method, and 15 reported using some type of unipolar technique. Effect sizes were not significantly different depending on the polarity, with unipolar assessment techniques having slightly larger effect sizes than bipolar techniques ($r = -0.20$ and $r = -0.16, z = 1.56, p = 0.12$). The results of assessment moderators demonstrate that both the method of assessment, as well as the polarity, moderate the relationship between goal conflict and psychological well-being outcomes, at least for distress variables.

For negative outcomes there were 19 nonstudent samples and 22 undergraduate or adolescent samples. The difference between correlations for adult ($r = 0.30$) and undergraduate samples ($r = 0.18$) demonstrated that adult samples showed a larger relationship between goal conflict and distress, $z = 3.46, p = 0.00054$. For positive outcomes, there were 11 nonstudent samples and 21 student samples. The same pattern of results is also present for psychological distress variables. Effects for goal conflict were larger in the non-student samples ($r = -0.24$) than for student samples ($r = -0.14, z = 2.97, p = 0.0030$). The hypothesis that older samples would show less of a relationship between goal conflict and well-

³ This analysis compared conflict matrices to studies using the CICA, RGT, and other miscellaneous measures, such as single item conflict measures. Given the large amount of research using matrices relative to other methods, we chose to analyze conflict matrices relative to other forms of assessment.

being was not supported, in fact the opposite finding emerged for both distress and positive outcomes.

For distress outcomes, nine studies reported drawing samples from clinical or psychologically distressed populations (e.g., individuals diagnosed with depression), and 32 samples were drawn from non-clinical populations. The mean effect size for clinical samples ($r = 0.28$) was not significantly larger than the mean for nonclinical samples ($r = 0.22$), $z = 1.80$, $p = 0.072$. A moderation analysis was not performed for the studies reporting positive outcomes as only three studies reported using a clinical sample and used positive outcome measures.

4. Discussion

This quantitative review examined the association of goal conflict with psychological well-being. Results support the longstanding theoretical notion that goal conflict is negatively related to psychological well-being, both when considering psychological well-being as a positive psychological attribute and as the absence of psychological distress. There were several moderators that impacted the strength of this relationship that can help to guide future research in goal conflict.

4.1. Moderators of the association of goal conflict with well-being

The results of this study show that goal conflict is associated with psychological well-being, though this association is stronger for distress than for positive outcomes. Previous research from the goal literature may help to clarify this finding. The goal-setting process may be a necessary but not sufficient condition for the achievement of well-being (Sheldon & Elliot, 1999); some degree of success in attaining goals may also be necessary. This notion is supported by Klug and Maier's (2015) finding that goal progress is more associated with positive psychological outcomes than with distress. By contrast, goal conflict may have an inherent association with psychological distress. Psychological distress may be a signal that one's goals are incompatible and in need of modification (Boudreaux & Ozer, 2013). The finding that goal conflict is associated with higher levels of rumination and behavioral inhibition (Cantor et al., 1992; Schultheiss, Jones, Davis, & Kley, 2008) is consistent with this notion.

Two methodological issues were addressed using moderation analyses. One assessment moderator looked at the unipolar versus bipolar nature of measurement. Previous research suggests that goal conflict and goal facilitation are only weakly correlated (Riediger, 2007). Goal conflict and facilitation also appear to be differentially associated with well-being and goal pursuit (Riediger & Freund, 2004). Using polarity of assessment as a moderator demonstrated that studies which used a unipolar measurement of goal conflict reported stronger associations of goal conflict and well-being. Unipolar measurement of goal conflict allows for a more targeted assessment of the construct of interest (Riediger & Freund, 2004). The results of this analysis support Riediger's (2007) claim that results from bipolar assessments of goal conflict yield weaker and more inconsistent effects than those obtained from unipolar measures.

Studies that used goal matrices to assess goal conflict reported smaller average effect sizes than those in which an alternative form of assessment (such as the CICA or RGT) was used. One possible explanation for this difference in effects sizes may be that the open-ended format of assessment using matrices typically makes no distinction between the types of goals used. The goals used in conflict matrices can be abstract or concrete, important or relatively unimportant, difficult or easy to achieve, and directed to the immediate or long-term future. The open-ended nature of con-

flict matrices produces greater heterogeneity in the goals used, which may explain the weaker effects. The CICA and RGT often utilize more abstract goals for the participant to rate such as "Improve myself" rather than more concrete strivings such as, "Lose five pounds" (Michalak et al., 2011). Future research might further investigate how goal characteristics from an open-ended format influence the relationship between conflict and well-being. Emmons (1992) found that more abstract goal setting is associated with increased psychological distress. The conflict between more abstract goals, more likely to be assessed by non-matrix methods, may reflect greater distress and less positive psychological functioning.

Evidence that one form of assessment yields stronger associations between goal conflict and well-being is not in itself a reason for the use of that technique. Goal matrices and techniques such as the CICA appear to be only weakly correlated with each other (Michalak et al., 2011), suggesting that the two techniques are not truly measuring the same constructs. Open-ended goal prompts can elicit goals of all types, from concrete goals which are to be pursued and completed in the near future to goals encompassing the entire lifespan; the CICA and RGT utilize abstract concepts that the person may be striving towards in the more distant future. The selection of one of these measures over another should be determined by the specific questions of the researcher.

Certain sample characteristics were hypothesized to moderate the relationship between goal conflict and well-being. The hypothesis that the relationship between goal conflict and well-being would be less strong in older samples was not supported, and in fact the results suggest that the opposite is true. This hypothesis was based on previous literature which had shown that older individuals report less goal conflict and have a tendency to consider goals together, rather than in isolation (Riediger et al., 2005). While older adults may report less goal conflict, the relation between goal conflict and well-being is stronger in older samples. Future research should clarify how goal conflict changes across the lifespan and the implications this has for psychological well-being.

4.2. Future directions and limitations

Given the relationship between goal conflict and well-being found here the most pressing area of future research is to establish the direction of causality between goal conflict and psychological well-being. With a few exceptions (e.g. Bailis, Thacher, Aird, & Lipschitz, 2011), the studies involved in this meta-analysis were correlational in nature, precluding a causal interpretation. While psychological theory more often suggests that goal conflict leads to lower well-being, it is also possible that the causal relation is in the other direction, such that individuals lower in psychological well-being feel more pessimistic about their goal attainment prospects and therefore report a greater degree of conflict. Longitudinal studies that tease apart the origins of goal conflict and well-being development would be instructive. While initial evidence supports the notion that manipulating goal conflict can influence negative emotions (Bailis et al., 2011), sufficient research has not yet accumulated to fully address this question.

The studies included here utilize mostly Western samples. This limits generalizability as there are currently few studies that examine goal conflict and psychological well-being in other parts of the world. In research on goal conflict, the omission of cultural variables is especially glaring considering the prior research suggesting that culture has an effect on the relationship between goal characteristics and subjective well-being (Oishi & Diener, 2001). For instance, Japanese subjects report adopting more avoidance goals than do subjects from the United States, with avoidance goals having negative implications for well-being across cultures (Elliot

et al., 2012). The existing literature would benefit from a focus on other cultures.

5. Conclusion

This meta-analysis integrates previously contradictory findings in the literature on the relationship between goal conflict and psychological well-being, showing that there is a correlation between goal conflict and psychological well-being. The strength of this relationship varies depending on sample characteristics and how both goal conflict and well-being are assessed. How goal conflict arises, and how it is related, perhaps both as a cause and as an effect of psychological well-being, remain important questions for future research.

Conflict of interest

The authors declare no conflict of interest with this study.

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