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Is the Role Attributed to Value Congruence in Transformational Leadership Theory a Case of Missing the Forest for the Trees? An Exploratory Study

René-Pierre Sonier [1] (ID) , Denis Lajoie [1] (ID)

[1] *School of Psychology, Université de Moncton, Moncton, Canada.*

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Corresponding Author: Denis Lajoie, School of Psychology, Université de Moncton, 18 Antonine-Maillet Ave, Moncton, NB, E1A 3E9, Canada. E-mail: denis.lajoie@umoncton.ca

Abstract

Value congruence between followers and leaders is considered to be a keystone of transformational leadership. However, we do not know whether congruence is important regardless of the content of values, of the leadership behavior assessed, and whether the patterns are stable across leaders. To address these gaps, we recruited a sample of 300 participants, representative of the U.S. population in terms of age, sex, and race, five days before the 2020 U.S. presidential elections. Participants assessed their own values as well as the values and transformational leadership of two presidential candidates. We explored the relationships between variables through multiple specifications of polynomial regressions and lasso regressions. Our results do not suggest that value congruence is particularly importantly related to transformational leadership; however, they do point to an important contribution by perceived leader benevolence. Based on these results, we conclude that the focus on value congruence in the leadership literature might be a case of missing the forest for the trees.

Keywords

> **Highlights**
> - In spite of apparent support for the importance of value congruence in the transformational leadership literature, value congruence effects in our study appeared to be few and weakly predictive of transformational leadership scores.
> - A linear relationship between perceived leader benevolence and transformational leadership scores appeared particularly stable across our analyses.

In the transformational and charismatic leadership literature, value congruence is often presented as an important component of leadership effectiveness. For instance, in the organizational domain, Hoffman et al. (2011) and Jung and Avolio (2000) both show that value congruence mediates the relationships between transformational leadership and outcomes. Hayibor et al. (2011), taking a different perspective, show that value congruence between followers and leaders is associated with higher perceptions of leader charisma (note that transformational and charismatic leadership are typically considered to be interchangeable when leadership is operationalized through a questionnaire, e.g., Antonakis et al., 2016). Likewise, studies from the political sphere have suggested value congruence to be a correlate of perceived leader charisma (Williams et al., 2012) and a factor in the association between leader charisma and voter choice (Williams et al., 2018). The importance of the role of value congruence in transformational leadership can notably be traced to the theoretical work of Shamir et al. (1993), who proposed that "A necessary condition for a leader's messages to have charismatic effects is that the message is congruent with the existing values and identities held by potential followers" (p. 588).

While one could describe the importance of value congruence as an "established" finding in the charismatic and transformational leadership literature, there are issues that muddy the waters. First, value congruence can mean many things. For instance, Edwards et al. (2006) describe molar congruence (a general perception of congruence also called "subjective fit"), molecular congruence (assessing the direction of perceived incongruence directly), and atomic congruence (comparing separate ratings of values for both targets, also called "objective fit"). Second, it is not clear that all values are equal in this context. More specifically, one may wonder whether congruence on any and all values matters or if congruence on specific values are more important (Brown & Treviño, 2009). Third, there are unresolved theoretical and empirical issues surrounding transformational leadership. For example, Van Knippenberg and Sitkin (2013) decry the fact that transformational leadership is conceptualized through multiple behaviors but is typically studied as a unitary construct, while Antonakis et al. (2016) argue that questionnaire measures of transformational and charismatic leadership are endogenous to leadership outcomes and are therefore better conceptualized as outcomes in statistical

models if one is not able to model the scores of these questionnaires through two-stage least squares regression.

In this context, we propose the exploration of one possible operationalization of Shamir et al.'s (1993) proposition. More specifically, this paper presents a study conducted in the political context of the United States presidential race of 2020. Participants rated their own basic psychological values (Schwartz, 2012), Donald Trump's values and Joe Biden's values as well as their perception of these leaders' transformational leadership behaviors (Rafferty & Griffin, 2004). This approach contributes to the literature in a few ways. Firstly, by asking participants to rate themselves and two leaders on all ten basic values, we can assess the role of the content of values (e.g., does congruence on security matter as much, less, or more than congruence on universalism?). Secondly, we can assess whether the importance of congruence is held constant when different leaders are assessed (e.g., is congruence on security more important to perceive Trump as transformational than for Biden?). Thirdly, it removes the confounding effects of the type of "charismatic effect" (i.e., the plethora of outcome variables that have been correlated to transformational leadership) by focusing on whether leaders are perceived to be transformational. Overall, then, this study has the potential to deepen our understanding of the role of value congruence in the context of politicians' transformational leadership.

Theoretical Context

Transformational Leadership and Values

While transformational leadership was originally conceived from the examination of political leaders (e.g., Burns, 1978), much of the related empirical work emerges from the organizational context. The promise of transformational leadership is the ability to motivate and inspire others so that they go beyond their self-interest to their group's benefit (e.g., Bass, 1999). Transformational leadership has, for example, been linked to increased job satisfaction (Eliyana & Ma'arif, 2019), well-being (Arnold et al., 2007), and a decrease in illegitimate absenteeism (Frooman et al., 2012). Nevertheless, some work in the political context (e.g., Pillai & Williams, 1998) does show a link between voters' perceptions of transformational leadership and voting intentions. Transformational leadership is typically operationalized through "positive" leader behaviors. For example, Rafferty and Griffin (2004) include the dimensions of vision, inspirational communication, intellectual stimulation, supportive leadership and personal recognition in their model of transformational leadership. While empirical findings surrounding transformational leadership appear to have generally been in line with the positive expectations surrounding these leadership behaviors, the theoretical work underpinning transformational leadership has been criticized (e.g., Yukl, 1999; Van Knippenberg & Sitkin, 2013). As Yukl (1999) states "There has been little empirical research on the underlying influence processes in charismatic leadership, and it remains the most speculative aspect of the theories" (p. 295). We will discuss some empirical work conducted after these comments, but the fact remains

that multiple interpretations of theoretical statements such as Shamir et al.'s (1993) are possible.

Regarding values, the basic psychological values approach sees values as being distributed on a circumplex (Schwartz, 2012). Values close to each other on the circumplex are understood to be compatible with each other, whereas values on opposite sides of the circumplex can lead to conflicting or incompatible actions. Schwartz (2012) identifies ten basic psychological values, which are distributed across two axes (personal focus vs. social focus and anxiety-based vs. anxiety free values). Values that are anxiety-based and have a personal focus are called self-enhancement values and include achievement and power values; values that are anxiety-based and have a social focus are called conservation values and include security, conformity and tradition; values that are anxiety-free and have a personal focus are called openness to change values and include hedonism (this value overlaps with self-enhancement values in empirical results), stimulation, and self-direction; and values that are anxiety-free and have a social focus are called self-transcendence values and this category includes universalism and benevolence.

While various theoretical approaches stipulate different processes by which values and transformational or charismatic leadership perceptions could relate, they generally agree that value congruence should have a positive effect on the development of charismatic leadership perceptions. For instance, the similarity-attraction paradigm proposes that similarity between individuals leads to positive interpersonal effects and harmony (Byrne et al., 1971). In terms of charismatic leadership, this could mean that a leader who emphasizes their common values with their followers could also foster affective arousal and attraction. Presenting values that are pre-existing for the followers increases the chances that the followers will choose to follow the leader, as in most cases leaders are not expected to impart new values to followers (Shamir et al., 1993). Alternatively, the social identification paradigm posits that the effects of charismatic leadership are more pronounced when the follower's relevant self-concepts are more readily activated (e.g., Howell & Shamir, 2005; Kark et al., 2003; Kets de Vries, 1988; Lord & Brown, 2001). Thus, by increasing common values' salience in the followers' self-concept, leaders can enhance their followers' identification with the mission which would lead to the benefits of charismatic leadership.

Value Congruence in the Transformational Leadership Literature

There are reasons to believe that all values are not equal when it comes to the charismatic effects of leaders. Of note, Brown and Treviño (2009) found that when perceptions of charisma were high, followers and leaders both reported somewhat similar levels on three of the four value types reported above, the exception being conservation values. This finding might be explained by the fact that transformational leadership is a change-oriented leadership (e.g., Groves, 2020). Shamir et al. (1993) emphasize that transformational leaders frame changes as being full of opportunity rather than threaten-

ing. In this sense it may be rather incoherent for a transformational leader to present a vision anchored in anxiety-based values. In the same way, transformational leadership is, by definition, a pro-social type of leadership (see, for example, the behaviors associated with consideration and with personal recognition). It is questionable whether a leader might have transformational effects if their goals are clearly self-enhancing. In support of this point, we note that Bass (1999) considered that leaders were transformational specifically when they helped move followers beyond their self-interests. In this sense, one could expect self-transcendence values to be inherent to any charismatic effects, and the opposite to be true for self-enhancement values. Relatedly, Byza et al. (2019) found that follower-leader value congruence is more highly related to perceived employee empowerment when there is congruence on self-transcendence values than with other kinds of values.

Despite these findings, one difficulty with the concept of value congruence is that it can point researchers to different measurement methods, which are not equivalent (Edwards et al., 2006). Concerning these methods (atomic, molecular, and molar, see above), Edwards et al. (2006) point out that each has advantages and disadvantages. Firstly, results obtained through the molecular method are biased by whether the person or the environment is set as the target or referent in the questions. For that reason, this approach is likely not recommendable. We are aware of no studies regarding follower-leader value congruence and transformational leadership utilizing this approach. Molar fit is generally most correlated with affect-laden variables, but also show correlational patterns that would be more expected of a measure of satisfaction with the target than of fit per se (Edwards et al., 2006). Moreover, molar fit cannot provide information regarding the role of the content of values, as it assesses the general perceptions of fit. This appears to be the most typical approach to the study of value congruence in the leadership context (e.g., Brown & Treviño, 2009; Groves & LaRocca, 2011; Hayibor et al., 2011; Hoffman et al., 2011; Jung & Avolio, 2000; Wang et al., 2018; Williams et al., 2018). Finally, atomic or objective fit has the draw back that value evaluations may be based on an internalized "standard" which is not made explicit by the results. Nonetheless, because the atomic type of fit is the one best suited to our purposes of exploring the role of the content of values, it is the one we adopt in this study.

We are aware of only two studies (from the organizational context) related to follower-leader value congruence and transformational/charismatic leadership that adopt an atomic conception of value congruence, Brown and Treviño (2009), and Hayibor et al. (2011; note that these latter researchers studied value congruence both subjectively and objectively). It is worth considering these studies in some depth to better contextualize our study. Brown and Treviño (2009) studied whether perceptions of charisma as a unitary construct (operationalized through a subset of the dimensions of a transformational leadership questionnaire) were associated with higher levels of value congruence. Importantly, while their results do show that followers' and leaders' values tend to be

at somewhat similar levels when charisma perceptions are high, their results cannot be interpreted as a congruence effect per se. In a true congruence effect, charisma should be maximized by value congruence at low levels of values just as much as at high levels of values (Humberg et al., 2019). Brown and Treviño's (2009) results do not show this full pattern. As to Hayibor et al.'s (2011) study: They showed that objective congruence on work values between top management team members and CEOs were associated with higher levels of perceived charisma (again operationalized as a unitary construct). However, Hayibor et al.'s (2011) results should be interpreted with caution as they modelled congruence through difference scores, a procedure that introduces severe bias in interpretations (Edwards & Parry, 1993). Ultimately, it appears that the role of "true" congruence in transformational/charismatic leadership remains to be empirically established.

The Present Study

We believe that we propose the first examination of the role of value congruence in relation to transformational/charismatic leadership through polynomial regressions and response surface analysis. These analyses permit the modeling of congruence effects at all levels of values (Humberg et al., 2019), in contrast to what is presently available in the literature. We also propose an exploration of value congruence in relation to multiple transformational leadership behaviors, rather than a unitary transformational leadership construct. We offer the following research questions to guide our exploratory analyses:

> *Research Question 1:* Is value congruence related to transformational leadership regardless of value content?

> *Research Question 2:* Is value congruence related to transformational leadership regardless of the transformational behavior considered?

> *Research Question 3:* Is the pattern of relationships between value congruence and transformational leadership behaviors similar between the two leaders in our study?

Method

This research was not pre-registered. Research data, code, and supplemental materials may be found on OSF (see Lajoie, 2023).

Participants

We recruited a total of 300 American participants from the prolific.com platform using a SurveyMonkey questionnaire. The inclusion criteria were specified using the prolific.com feature to collect a sample representative of the United-States population in terms of

age, sex, and race/ethnicity, with the caveat that participants had to be 18 years of age or older. Participants received 1.66 GBP for their participation. The survey was (only) open on October 30th, 2020, five days before the November 3rd election. Participant characteristics are presented in Table S1 of the supplementary material (see Lajoie, 2023), along with the targets set by prolific.com for representativeness. The largest discrepancy to representativeness for age was with the 75 years old + group (expected 9.33%, 3.36% of sample) and Caucasians for race (expected 62.67%, 69.13% of sample).

Instruments

Values

Values were assessed with Sandy et al.'s (2017) Ten Item Value Inventory ("TIVI"). Each participant assessed their own values, Donald Trump's values, and Joe Biden values. In the TIVI, each of the ten items assesses one of the values in Schwartz's (2012) universal values theory. Sandy et al. (2017) find that the TIVI appropriately replicates the patterns of correlations found between longer values questionnaires and other variables in the nomological network of values, that TIVI scores correlate highly with the scores of longer questionnaires (average correlation of .81), that the order of value importance found with the TIVI is similar to the order found with longer questionnaires (rank-order correlation of .91), and that test-retest correlations over a two-week lag were appropriate (average correlation of .66). Participants indicate on a six-point scale (1: not like me/Donald Trump/Joe Biden at all; 6: very much like me/Donald Trump/Joe Biden) the extent to which a statement representing a value characterizes the target. A sample item (for the "power" value) would be "It is important to him/her to be in charge and tell others what to do. S/he wants people to do what s/he says". We chose a short values questionnaire to minimize questionnaire fatigue for our participants, who answered this questionnaire thrice.

Transformational Leadership

The transformational leadership of Donald Trump and Joe Biden was assessed with a slightly modified version of Rafferty and Griffin's (2004) questionnaire. Specifically, whereas Rafferty and Griffin's (2004) questionnaire includes language specific to an organizational work context (e.g., "employees", "organization") and to personal or dyadic relationships (e.g., "Considers my personal feelings before acting"), we adapted the language of the items to reflect the political context (e.g., "Americans", "country") and distal nature of the relationship (e.g., "Considers the personal needs of Americans before acting"). In this questionnaire each of the five transformational leadership dimensions are evaluated through three items each. Rafferty and Griffin (2004) report that the structural model of the questionnaire fits their data well in a confirmatory factor analysis. What is more, they show evidence of discriminant validity for the different behaviors assessed by their questionnaire; an interesting advantage as discriminant validity is a

common issue in transformational leadership questionnaires (Van Knippenberg & Sitkin, 2013). Participants indicate on a 5-point scale the extent to which they agree that the transformational leadership behaviors illustrated by the items is typical of each leader.

Data Preparation and Descriptive Analyses

Participants who did not correctly answer at least four of five verification questions were removed from the sample (two participants). Transformational leadership behavior scores were computed by calculating the mean of the items associated with each dimension (one item was reverse scored). Because Shamir et al.'s (1993) theoretical work conceptualizes charismatic leadership as a unitary construct, and to permit comparison to previous works, we also calculated a total transformational leadership score by averaging dimension scores. Table S2 in the supplementary material (see Lajoie, 2023) provides descriptive statistics for the study variables and includes a summary of missingness in our data. While our sample was fairly representative of the population in terms of age, sex, and race, Republican voters were apparently under-represented in our sample (19.46% intended to vote for Trump in our sample, whereas Trump collected 46.9% of votes in the election; Jacobson, 2021). As can be seen in Table S2, participants' mean self-ratings on values ($M = 3.95$, $SD = 1.59$) were generally higher than their ratings of Trump's values ($M = 3.58$, $SD = 1.92$) but lower than their ratings of Biden's values ($M = 4.13$, $SD = 1.39$). Participants rated Biden ($M = 3.71$, $SD = 1.03$) as having higher transformational leadership compared to Trump ($M = 2.44$, $SD = 1.12$).

Results

Analytical Strategy

Overall, our analyses included a verification of the psychometric structure of our questionnaire measures, Response Surface Analyses (RSA), and a series of lasso regressions. With regards to the two latter sets of analyses, we adopted a "multiversal" analytical framework. As Steegen et al. (2016) put it, "A multiverse analysis is a way to avoid or at least reduce the problem of selective reporting by making the fragility or robustness of the results transparent". In this framework, one aspires to analyze many reasonable specifications for their analysis. The idea is to limit the impact of the "garden of forking paths" (Gelman & Loken, 2014) by considering many analytical paths. It is, of course, impossible to exhaustively cover all reasonable paths; choices must be made. We chose to focus on analyzing all leadership variables as potential dependant variables, along with various combinations of predictors. Based on reviewer feedback, we added analyses conducted with ipsativized value scores and also tested congruence effects through difference scores. Ipsatization of value scores refers to centering value scores within participants. This practice is sometimes argued to correct for biases in the response to value

scales (see Rudnev, 2021, for a detailed discussion). Regarding difference scores, they represent a classic conceptualization of congruence. While they cannot be interpreted as congruence effects per se (Edwards & Parry, 1993), they do permit comparison to other studies' results (such as Hayibor et al., 2011).

Preliminary Analyses

We first examined the psychometric structure of our questionnaire measures. Due to the single-item nature of the values questionnaire, we conducted multidimensional scaling (MDS) on the data (both with raw and ipsativized scores) by using the smacof R package (Mair et al., 2022). The MDS figures are presented in the online supplement (see Lajoie, 2023). In most cases, the nearest neighbor of a value aligns with the circumplex model (Schwartz, 2012). However, the circumplex of values is not accurately reproduced under any condition (self, Biden, Trump, normative, or ipsative), as many neighboring pairs appear to be "flipped". Of particular concern is the security value. Particularly with ipsativized scores, Trump's security value appears closely related to self-determination and stimulation—a position that is opposite to where the circumplex model predicts the security value should be (and where it is for Biden). This suggests that participants may "mean" something different when they say that Trump or Biden value security.

For the transformational leadership questionnaire, we conducted a CFA using the lavaan R package (Rosseel, 2012) and the MLR estimator. For both Trump and Biden, the fit of the data to the theoretical model (5 separate factors) can globally be considered adequate based on typical guidelines (Trump: χ^2 = 252.35, df = 80, Robust CFI = .95, Robust TLI = .94, Robust RMSEA = .09, SRMR = .05; Biden: χ^2 = 191.49, df = 80, Robust CFI = .97, Robust TLI = .96, Robust RMSEA = .07, SRMR = .06). McDonald's omegas calculated in SPSS ranged from .80 to .97 and .86 to .97 for Trump and Biden respectively. Correlations between all variables are available in the supplementary material (Table S3; see Lajoie, 2023).

Polynomial Regressions and Response Surface Analyses

To explore the presence of congruence effects in our data we started with Response Surface Analyses (RSA) with the RSA package (Schönbrodt & Humberg, 2023) in R. We conducted RSAs for each value, each transformational leadership variable, and both leaders using both normative and ipsative value scores. RSAs permit researchers to examine whether the highest values for a dependant variable fall along the line of congruence by modeling the expected values in the three-dimensional space of the variables (Edwards, 1994). In our case, the three dimensions are defined by self-rated values, leader values, and leadership scores. The surface obtained by modeling this space is then analyzed through various parameters (called p10, p11, a1, a2, a3, and a4 in the RSA package and elsewhere in the literature; Schönbrodt & Humberg, 2023) that allow us to confirm

whether the highest values are indeed found along the line of congruence (i.e., the line where the values of both predictors are the same).

Humberg et al. (2019) detail four criteria that allow us to determine whether a congruence effect is indeed present in the data: 1. the intercept of the First Principal Axis (p10) should not be significantly different from 0 (the First Principal Axis is the line that follows the ridge of maximal values in RSA—it should pass through the 0,0 coordinates if maximal values are along the line of congruence); 2. the confidence interval surrounding the slope of the First Principal Axis (p11) should include the value of 1 (the ridge of maximal values not only needs to pass through the 0,0 point, but must not deviate from the line of congruence at other values); 3. there should be a negative and significant curve (a4) on the line of incongruence (values that deviate from the line of congruence should be lower than values on the line of congruence); 4. the slope of the line of incongruence (a3) at 0,0 should not be significant (if it is, the ridge of maximal values is necessarily skewed away from the line of congruence). While these four criteria are presented as sufficient for a "broad sense" congruence effect, Humberg et al. (2019) provide an extra two criteria necessary for detecting a congruence effect in the strict sense: 5. the slope on the line of congruence should not be curved (a2), and should not be significant (a1), such that the effects of congruent combinations of predictor variables would be constant regardless of the values. Humberg et al. (2019) note that it may be justifiable to conclude that a congruence effect is present even when the ridge of maximal values on the line of congruence is not constant, depending on the theoretical context surrounding the effect.

As per Humberg et al. (2019), we examined whether the data appropriately covered the different discrepancy scenarios (i.e., there should be cases where participants are congruent with leaders, where participants rate themselves as higher than leaders, and where participants rate themselves lower than leaders). As we are not aware of any general guidelines that recommend specific minimum representation in each type of discrepancy scenario, we decided to establish our own cut-off specific to our study. We determined that we would not run RSA when at least one discrepancy scenario was represented by less than 15% of our sample. This admittedly somewhat arbitrary cut-off was meant to ensure that each scenario would be represented by more than 30 participants, thereby favoring some reliability in the expected values on both sides of the line of congruence and along this same line. Table 1 displays discrepancy patterns for the planned analyses. We excluded ten leader-value conditions from our analyses with normative scores and nine from analyses with ipsative scores.

Table 1

Discrepancy Patterns in Self and Leader Ratings of Values

Leader-value condition	Self-ratings greater than leader ratings (Iᵃ)	Self and leader ratings congruent (I)	Leader ratings greater than self-ratings (I)	Decision (Iᵇ)
Biden Conformity	26% (26%)	24% (36%)	49% (39%)	Include
Biden Tradition	23% (19%)	**13%** (19%)	64% (62%)	Exclude (Include)
Biden Benevolence	36% (45%)	32% (33%)	33% (22%)	Include
Biden Universalism	40% (50%)	40% (35%)	20% (15%)	Include
Biden Self-direction	54% (62%)	32% (27%)	**13% (1%)**	Exclude
Biden Stimulation	42% (46%)	29% (29%)	27% (23%)	Include
Biden Hedonism	55% (61%)	31% (26%)	**14% (13%)**	Exclude
Biden Achievement	19% (17%)	21% (37%)	59% (46%)	Include
Biden Power	**9% (5%)**	17% (31%)	73% (63%)	Exclude
Biden Security	34% (39%)	28% (28%)	38% (33%)	Include
Trump Conformity	60% (55%)	19% (26%)	20% (18%)	Include
Trump Tradition	38% (31%)	35% (33%)	27% (35%)	Include
Trump Benevolence	80% (76%)	**12% (21%)**	**8% (2%)**	Exclude
Trump Universalism	72% (80%)	26% (15%)	**1% (4%)**	Exclude
Trump Self-direction	77% (75%)	14% (22%)	**8% (2%)**	Exclude
Trump Stimulation	31% (19%)	16% (27%)	51% (52%)	Include
Trump Hedonism	30% (23%)	22% (29%)	47% (46%)	Include
Trump Achievement	**4% (1%)**	**9% (14%)**	86% (84%)	Exclude
Trump Power	**3% (1%)**	**6% (12%)**	91% (87%)	Exclude
Trump Security	48% (43%)	25% (29%)	27% (28%)	Include

Note. The zone of congruence is defined by +/- .5 *SD*.
ᵃIpsative; the percentage in parentheses reflects discrepancies observed with ipsativized values. ᵇThe only decision that differs between normative scores and ipsative scores is the Biden Tradition condition, others are suppressed for legibility.

Table 2 presents the general pattern of results of the RSAs we conducted. Our results suggest the presence of seven congruence effects with normative scores and nine with ipsative scores. Table S4 summarizes the frequency with which the RSA results failed to meet each congruence effect criterion suggested by Humberg et al. (2019). Amongst the four necessary criteria, the most frequent failures were that the slope of the first principal axis deviated from the line of congruence (p11) and that the slope on the line of incongruence was significant (a3).

Table 2

Summary of Value Congruence Conclusions Following RSA

Leader-value condition	Transformational leadership (I[a])	Vision (I)	Inspirational communication (I)	Intellectual Stimulation (I)	Consideration (I)	Personal Recognition (I)
Biden Conformity	No	No	No	No	No	No
Biden Tradition	(No)	(No)	(No)	(No)	(No)	(No)
Biden Benevolence	No	No	No	No	No	No
Biden Universalism	Broad[b] (No)	No (Broad)	Broad (No)	No (Broad)	Broad (No)	No (Broad)
Biden Stimulation	No	No	No	No	No	No
Biden Achievement	No	No	No	Strict (Broad)	No	No
Trump Conformity	No	Broad (No)	No	No	No	Broad (No)
Trump Tradition	No (Broad)	No	No (Broad)	No (Broad)	No	No
Trump Stimulation	No	No	No	No (Broad)	No	No
Trump Hedonism	No	No	No	No	No	No
Trump Security	No	No	No	Broad	No	No

[a]Ipsative; the conclusion relating to the value congruence effects reported in parentheses result from RSAs conducted with ipsativized value scores. We only include the parentheses when the result is different for ease of legibility. [b]Broad refers to "broad sense" congruence effect (Humberg et al., 2019), where the effect meets the four essential parameters for a congruence effect but not the full six parameters for a "strict" congruence effect.

The apparent sparsity of congruence effects leads to mitigated information with regards to our research questions. We cannot conclude that value congruence is related to transformational leadership regardless of value content (Research Question 1), as no congruence effects were found for five of the eleven analyzed value-leader conditions. Indeed, we could not even test for congruence effects for the self-direction and power values (and for multiple other value-leader conditions), as discrepancy patterns were too one-sided. We also cannot conclude that value congruence is related to transformational leadership evaluations regardless of the behavior considered (Research Question 2), as too few congruence effects were found with most leadership variables. We must further conclude that there is no evidence that the pattern of relationships between value congruence and transformational leadership is similar for both leaders in our study as no congruence effects were found for both leaders with the same values. On the other hand, there is similarity in this pattern in that in most cases, there are no congruence effects for either leader. In fact, our overall conclusion from these results is that we should question whether value congruence is indeed robustly associated with transformational leadership.

Lasso Regressions

The RSA we conducted considered each value-leader condition separately. While this approach has the advantage of providing an easily interpreted pattern of results for the individual variables in the analysis, it has well-known drawbacks such as an increased false discovery rate and the fact that we may miss important suppression effects. We therefore opted to regress our leader variables on the full set of self-ratings and leader ratings of values, along with the associated polynomial terms for each leader. The "other-side-of-the-medal" drawbacks to this latter approach are that regressions with large sets of predictors may be difficult to interpret and tend to overfit to the data. In these scenarios, Edwards and Parry (1993) suggested that it may be useful to determine a subset of predictors that are most important to explain variance in the regression.

To accomplish subset selection, we opted to use lasso regression. As detailed in Yarkoni and Westfall (2017), lasso regression avoids overfitting models in comparison to ordinary least squares regression—especially when the data has a "dense" structure (a high number of parameters in comparison to the sample size). Lasso regression introduces a penalty term in the regression (called lambda) whereby small coefficients are set to zero. Doing so, it finds the sparsest linear solution that permits the minimization of both the sum-of-squares in the regression and of the absolute sum of coefficient values. When using lasso regression, models are often evaluated in terms of how well they minimize prediction error (i.e., "mean squared error") rather than in terms of how well they maximize shared variance (i.e., the value of R squared). This nuance is important, as scientists often aim to explain rather than simply "predict" (Yarkoni & Westfall, 2017).

Nevertheless, if a set of predictors offers no contribution to the prediction of an outcome, this set is likely of little explanatory value.

As preliminary steps to lasso regressions, we removed participants who had missing data for at least one of our variables of interests (final sample size of 259) and randomly halved the sample into a training sample and a test sample. We then conducted twelve lasso regressions per dependant variable (the six leadership variables for both leaders), using the training sample. The twelve lasso regressions used different sets of predictors: 1. Self-ratings and leader ratings of values only; 2. Self-ratings and leader ratings of values and associated polynomial terms (squared values and interactions between self-ratings and leader ratings of values); 3. Self-ratings and leader ratings of values and associated absolute difference scores, 4. Self-ratings and leader ratings of values, and demographic variables; 5. Self-ratings and leader ratings of values, associated polynomial terms, and demographic variables; 6. Self-ratings and leader ratings of values, associated absolute difference scores, and demographic variables. These six sets of predictors are doubled, as we used both normative and ipsative scores for values. The set of demographic variables included household income, age, gender (male or female values only), education level, political orientation (one item 7-point Likert scale from very liberal to very conservative), Caucasian (dummy variable), and African American (dummy variable). We added the demographic variables to determine whether our results would be robust to their inclusion.

Lasso regression analyses were conducted using the glmnet R package (Friedman et al., 2022). In the interest of maintaining the logic of congruence effects, the polynomial terms we included were limited to the square of self-ratings and leader scores of values and the interaction terms between self-ratings and leader scores for the same values (interested researchers might have included interactions between any value scores regardless of target and any number of polynomial values). To establish the predictive value of including polynomial terms, difference scores, and demographic variables beyond the self-ratings and leader ratings of values, we calculated the mean squared error of the lasso-selected models in the test sample. We then compared each test sample mean squared error to the null model (the null model uses the training sample mean of the dependant variable to predict the observed dependant variables of the test sample) to create indices that can be interpreted much like an R-squared value. The equation for these indices, R^2_{OOS} (or "out-of-sample R-squared", Campbell & Thompson, 2008), can be compared to the standard R-squared formula to facilitate comprehension. We note that R^2_{OOS} can take values from $-\infty$ to 1.

$$R^2_{OOS} = 1 - \frac{\sum \left(\widehat{y}_{test} - y_{test}\right)^2}{\sum \left(\overline{y}_{train} - y_{test}\right)^2} \text{ (Eq. 1)}$$

The $\widehat{y}_{test}$ values in Eq.1 are predicted in the test sample by using the lasso-selected model parameters from the training sample.

$$R^2 \; = 1 - \frac{\sum \left(\widehat{y} - y\right)^2}{\sum \left(\bar{y} - y\right)^2} \; \text{(Eq.2)}$$

The R^2_{OOS} values for the various specifications of our analyses are presented in Table 4. From this table we can see that on average, the prediction mean squared error in the test sample by the normative lasso-selected models is about half of what it would be if we only used the training sample mean to predict test sample transformational leadership variables, and about a third in the case of the ipsative scores). Moreover, the Values predictor set appears to be the main driver of error reduction. The regression coefficients selected by the lasso models are presented in Table S4. Among the Values coefficients, Leader Benevolence stands out: it is the most frequently selected Values predictor in our 144 specifications (selected in 96% of normative specifications and 79% of ipsative specifications) and is attributed more weight on average than the other predictors in that set (.20; the next runner up, Leader Self-direction, has average weight .08 and was selected in 88% of normative specifications and in 78% of ipsative specifications).

We can now return to our research questions. Research Question 1 asked whether value congruence was related to transformational leadership regardless of value content. The fact that polynomial terms and difference scores provide little information beyond that which is contained in the value ratings themselves suggest that value congruence is not particularly important in the prediction of leadership scores. However, value content does seem to matter for linear effects, as the lasso regularly attributed larger coefficients to leader ratings of benevolence than to other values. Research Question 2 asked whether value congruence was related to transformational leadership regardless of the transformational behavior considered. Here, again, we eschew the concept of value congruence in favor of linear effects. We find a wide range of R^2_{OOS} values in Table 4, suggesting that behaviors matter. For instance, Intellectual stimulation appears to be less well predicted by values than other transformational leadership behaviors. Research Question 3 asked whether the the pattern of relationships between value congruence and transformational leadership behaviors was similar between the two leaders in our study. Keeping our focus on linear effects, the patterns do appear similar in the fact that benevolence appears to be an important value for both leaders and that intellectual stimulation is less well predicted by value ratings than other behaviors. However, there is a certain difference in that R^2_{OOS} values appear to be higher for Trump than for Biden.

Table 4

R^2_{OOS} Values for Each Dependent Variable and Set of Independent Variables

Dependant variable	Values (I[a])	Values and polynomials (I)	Values and difference scores (I)	Values and demographics (I)	Values, polynomials, and demographics (I)	Values, difference scores, and demographics (I)
Trump Transformational leadership	.76 (.54)	.78 (.59)	.74 (.54)	.76 (.58)	.78 (.63)	.78 (.45)
Trump Vision	.52 (.39)	.52 (.40)	.52 (.39)	.54 (.41)	.53 (.43)	.51 (.40)
Trump Inspirational communication	.63 (.44)	.65 (.50)	.63 (.31)	.65 (.49)	.65 (.54)	.66 (.41)
Trump Intellectual stimulation	.33 (.20)	.35 (.09)	.31 (.18)	.35 (.23)	.33 (.28)	.35 (.19)
Trump Consideration	.76 (.66)	.77 (.67)	.77 (.64)	.77 (.68)	.77 (.69)	.77 (.55)
Trump Personal recognition	.46 (.35)	.45 (.35)	.44 (.35)	.47 (.35)	.47 (.38)	.45 (.35)
Biden Transformational leadership	.5 (.35)	.52 (.28)	.46 (.36)	.52 (.36)	.52 (.36)	.52 (.39)
Biden Vision	.41 (.37)	.41 (.36)	.38 (.40)	.41 (.34)	.41 (.35)	.44 (.38)
Biden Inspirational communication	.43 (.24)	.46 (.23)	.42 (.28)	.46 (.28)	.46 (.29)	.46 (.32)
Biden Intellectual stimulation	.13 (.09)	.13 (.07)	.15 (.08)	.13 (.09)	.13 (.09)	.15 (.08)
Biden Consideration	.48 (.35)	.50 (.34)	.42 (.39)	.50 (.41)	.50 (.42)	.51 (.45)
Biden Personal recognition	.42 (.26)	.41 (.09)	.42 (.25)	.41 (.25)	.41 (.20)	.39 (.22)
Mean	.49 (.35)	.50 (.33)	.47 (.35)	.50 (.37)	.50 (.39)	.50 (.35)

[a]Ipsative; the R^2_{OOS} values reported between parentheses result from analyses with ipsativized value scores.

Discussion

The goal of the present study was to explore one possible operationalization of an important proposition from Shamir et al.'s (1993) model of transformational leadership. This proposition stipulates that value congruence is a necessary condition for the emergence of transformational effects. We operationalized this proposition by testing whether the congruence between American individuals' values and their perception of 2020 presidential candidates' values would be associated with attributing more transformational leadership to those leaders. We explored our data in two different ways. First, we conducted 126 polynomial regressions with accompanying response surface analyses. We found evidence of congruence effects in 16 of these analyses (12.70% of analyses). Second, we conducted 144 lasso regressions and examined patterns in the resulting R^2_{OOS} values. We found that adding polynomial terms or difference scores to the predictor set did not greatly increase R^2_{OOS} values on average. Therefore, while our results do not preclude value congruence playing some role in transformational leadership relationships, it appears that emphasizing the importance of value congruence over that of perceived leader values might be a case of missing the forest for the trees, at least in the political context.

A first impact of our study is that it appears there are obstacles to the study of value congruence in the leadership context. Foremost among these is probably the fact that discrepancy patterns may not be varied enough to permit even testing the existence of congruence effects as defined in the RSA framework (e.g., Humberg et al., 2019). While this issue may have been exacerbated by our choice to study political leaders, there is a risk that this kind of pattern may be generalized. If leaders are different than non-leaders (e.g., Ensari et al., 2011), it is likely that they will hold different values than non-leaders on average. Insofar as leadership implies power, a population where a large enough proportion of subordinates or followers value power more than their leader may be improbable. From a purely practical point of view, a value congruence hypothesis becomes essentially unverifiable.

These practical difficulties can be considered jointly with both the little evidence we found for value congruence effects, and the significant evidence we found for linear effects of perceived leader values. This leads us to believe that it may be advantageous to refocus leader-follower value congruence research efforts towards the process through which followers attribute values to a leader. If perceptions of leader benevolence are indeed fundamental to the establishment of a transformational leadership relationship, we need to better understand how followers come to perceive benevolence in leaders. Here, Funder's (2012) Realistic Accuracy Model (RAM) may be helpful. According to this model, when people make personality judgment, they first need to notice behavior relevant to the personality trait. The question for us then becomes: what leader behaviors are relevant to perceptions of benevolence?

To avoid the circular reasoning that might intervene (e.g., leaders who emit more transformational leadership behaviors are perceived as more benevolent and are in turn perceived as emitting more transformational leadership behaviors), it may be advantageous to include Stock et al.'s (2023) approach to transformational leadership assessment (which is comparable to Antonakis et al.'s, 2016, approach to charismatic leadership assessment). In this approach, transformational leadership is assessed by raters with a checklist of observable verbal content and modes of expression. Such an approach would then lead us to identify observable behaviors (that are exogenous to perceptions of transformational or charismatic leadership) that favor perceptions of benevolence. In fact, it may be worthwhile to verify whether media sources consulted by participants during elections focus on different verbal content and modes of expression of political leaders and whether these potential differences are in turn also associated with different attributions of benevolence to leaders. At the same time, the fact that the "same leaders" (notwithstanding diversity in media portrayals) are rated differently by individuals suggests that individual differences must be included in a complete model.

While some previous studies have explored the impact of value congruence in the context of transformational leadership (e.g., Hayibor et al., 2011; Brown & Treviño, 2009, etc.), these differed from our study in important ways. Firstly, these studies explored transformational leadership in the organizational context, while we explored a political context. This distinction could have an important impact due to the proximity that followers have with leaders in the organizational context compared to the political context (Antonakis & Atwater, 2002). In the context of organizations, the levels of hierarchy separating the followers from their leaders are necessarily fewer than those separating individuals from the United States' general population and their president. While proximal organizational leaders can develop personal relationships with their team of subordinates, it is presumably more difficult for presidential candidates to do the same (e.g., Rockstuhl et al., 2012).

A second distinction between this study and the previous studies exploring the role of value congruence on charismatic leadership, lies in the operationalization of variables. As mentioned previously, the majority of past research on the subject (including those in the political context) operationalized value congruence through a subjective assessment ("molar" fit). These differences could explain the different conclusion that we come to regarding value congruence. While many studies have found support for value congruence hypotheses (e.g., Brown & Treviño, 2009; Groves & LaRocca, 2011; Hayibor et al., 2011; Hoffman et al., 2011; Jung & Avolio, 2000; Wang et al., 2018; Williams et al., 2018), conclusions are debatable as their methods do not permit the statistical examination of strict congruence effects as per Humberg et al. (2019). Therefore, while our study is exploratory and should be replicated in different contexts, a careful assessment of the leader-follower value congruence literature at this time could be that there may be value congruence effects, but they are likely to be small. Incidentally, our operationalization

also emphasized that not all transformational leadership behaviors were equally linked to values. This can be seen as supporting Van Knippenberg and Sitkin's (2013) call to avoid studying transformational leadership as a unitary construct.

Limitations

A few limitations of this study will now be addressed. A first limitation is the lack of discrepancy in certain combinations of leaders and values. We cannot make any statements on the pattern of results from those specific combinations, other than admitting that the data does not allow us to test congruence effects. This issue can point us towards the more general issue of statistical power. Some researchers (e.g., Humberg et al., 2019; Nestler et al., 2015) have argued that statistical power should be high when testing congruence hypotheses and have suggested that Monte Carlo simulations bay be useful for estimating power. However, this idea remains rather unclear in application because the presence of congruence effects is diagnosed based on a pattern of effects rather than on single parameters. In the case of the present paper, we can determine post hoc that we simultaneously clearly *did not* have enough power to detect congruence effects in low discrepancy situations (for instance, only ~1% of our sample reported that they perceived that Trump valued universalism more than them—this implies that we would have needed a minimal sample size of 3000 to meet our minimal cut-off in discrepancy to even test a congruence hypothesis in this case) and apparently *did* have enough power to detect at least the clearest congruence effects. Considering these complexities, we underscore that we did not test a single severe hypothesis of a well-defined theory; we explored our data based on theoretically "untidy" questions (Tukey, 1980). Our conclusions are guided more by patterns of effect sizes rather than by statistical significance per se.

A second limitation is that while the sample was fairly representative of the United-States adult population on age, sex and ethnicity, it was not in terms of political affiliation. This could have had a major effect on the general perceptions of both Biden and Trump in our data. For example, Trump was notably perceived to value self-enhancement values at a very high level and self-transcendence values at much lower levels, while Biden had higher value scores in general. A third limitation is that the results of lasso regressions must be carefully interpreted pending replication. Lasso regression heavily penalizes predictors that are highly correlated to selected predictors (for instance, other self-transcendence values are less likely to be selected when benevolence is already in the model). This means there is a possibility that the emphasis on benevolence in our results is caused by an idiosyncrasy in our training sample (hence the importance of replication). On the other hand, the fact that we tested multiple specifications of our analyses and found robust patterns throughout these specifications increases our confidence in the replicability of our results (e.g., Steegen et al., 2016; Simonsohn et al., 2020). With that in mind, we should note that our multiverse approach did not cover

all forking paths in the analysis. For instance, we could have chosen to group values by the four types of values or applied various transformations and computation methods for our scores. Finally, we note that we modeled transformational leadership variables as outcomes for methodological convenience. We remain agnostic as to the direction of causality between values/value congruence and perceptions of transformational leadership. However, if the baseline relationship between variables is weaker than deemed useful, directionality is admittedly of questionable importance.

Conclusion

Shamir et al. (1993) proposed that value congruence is an essential condition for a leader to develop a charismatic relationship with their subordinates. Our results suggest that rather than the congruence of values, when it comes to attributing transformational leadership qualities to a political leader, it is the perception that certain values are important to leaders that matters most. We recognize that value congruence may have a more-than-zero effect with regards to transformational leadership, but a shift in focus in leadership research from value congruence to value attribution may be advisable to better reflect how much these concepts help predict perceptions of transformational leadership.

Supplementary Materials

For this paper, the following Supplementary Materials are available (see Lajoie, 2023):

- Data and code
- All figures produced by the RSA package
- Tables S1–S5
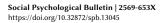
Index of Supplementary Materials

Lajoie, D.. (2023). *Value congruence and transformational leadership* [Data, code, figures, tables]. OSF. https://osf.io/7tfbp

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