

# A New Measure of Authoritarianism: Development and Validation of the Short Modern Comprehensive F Scale in Germany and the U.S.

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**Supplementary Materials:** Code, Data [see [Index of Supplementary Materials](#)]



## Abstract

Previous research suggests that the concept of *Right-Wing Authoritarianism* (RWA) may be no longer sufficient to explain attraction to contemporary right-wing movements. Using data from two correlational studies in Germany ( $N = 469$ ) and the United States ( $N = 314$ ), we developed the 9-item *Modern Comprehensive F Scale* (MCF-9), integrating all nine facets from the *California F Scale* (Adorno et al., 1950). Validation criteria included right-wing political and antidemocratic attitudes, antisemitism, xenophobia, and donation preferences. Confirmatory Factor Analysis confirmed the one-dimensionality of MCF-9. The scale showed good internal consistency ( $\omega = .87$  in Germany;  $\omega = .90$  in the U.S.), and had strong positive associations with RWA, and Social Dominance Orientation (SDO). Notably, MCF-9 accounted for additional variance in all validation criteria (up to 17% in Germany; up to 20% in the U.S.) beyond two established RWA scales, positioning it as valuable contemporary measure. Limitations and implications are discussed.

## Keywords

California F Scale, right-wing authoritarianism, political attitudes, antisemitism, xenophobia, right-wing populism, right-wing extremism



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Democracy is under unprecedented pressure, with an increasing number of countries showing democratic backsliding (Gorokhovskaia & Grothe, 2024). Some researchers even speak of an authoritarian renaissance (Adler et al., 2023). Authoritarianism is widely discussed in political psychology and sociology and is regarded as underlying anti-democratic, outgroup derogatory, and right-wing attitudes and behavior (Osborne et al., 2023). Yet, consensus on its definition and measurement remains elusive (Iser, 2006). The concept of authoritarianism first gained prominence through *The Authoritarian Personality* (Adorno et al., 1950) and has since been repeatedly re-conceptualized (e.g., Oesterreich, 1996, Feldman, 2003; Duckitt, 2001). The most prominent approaches remain within the framework of *Right-Wing Authoritarianism* (RWA; Altemeyer, 1981, 1988, 1996), encompassing Authoritarian Aggression, Conventionalism, and Authoritarian Submission. However, the question arises whether modern right-wing movements incorporate elements beyond these three. To provide a broader and contemporary measure of authoritarianism, the present paper introduces the *Modern Comprehensive F* (MCF) *Scale*.

## The Authoritarian Personality

*The Authoritarian Personality* (TAP; 1950) was developed by Adorno, Frenkel-Brunswik, Levinson, and Sanford in the aftermath of World War II. Based on their research, they explained the rise of fascism and anti-Semitism in Europe through an individual susceptibility to prejudice and fascism, rooted in early childhood family dynamics and therefore influenced by the child-rearing practices of society.

Combining psychodynamic theory with empirical methods, Adorno et al. (1950) identified nine interrelated facets: Authoritarian Submission, Conventionalism, Authoritarian Aggression, Anti-Intraception, Superstition and Stereotypy, Power and Toughness, Destructiveness and Cynicism, Projectivity, and Sex (see Appendix A.1 for detailed presentation). They developed the *California Fascism* (F) *Scale*, a highly influential and widely cited measure that, in the course of shifting social and scientific paradigms, faced increasing criticism (e.g., Christie, 1991).

Key criticisms include the lack of generalizability of the sample (Iser, 2006), the influence of education levels on results (Funke, 2003), the issue of inferring personality traits from situation-specific attitudes (Rippl et al., 2000; Oesterreich, 1996, 2005), and the lack of interpretive objectivity in the interviews (Martin, 2001). The most known critique was the response-set problem by Cronbach (1946), who noted that ambiguous, uniformly keyed items like those in the F Scale are prone to response bias, an issue also acknowledged by the original authors (Adorno et al., 1950, p. 161). Also, the scale's external validity was questioned as it relied mainly on correlations with earlier scales (A-S and E; Iser, 2006), however, its external validity was supported by later research (e.g., Steiner & Fahrenberg, 2000). Altemeyer (1981) criticized the unclear distinctions of the subscales. During the cold war, the Berkeley group faced criticism of ideological bias for focusing on authoritarianism on the right and not on the left. This initiated

the debate and ongoing controversy on left-wing authoritarianism (e.g., [Altemeyer, 1996](#); [Costello et al., 2022](#); [Nilsson, 2024](#)). Finally, the psychodynamic foundation of TAP and its non-falsifiable assumptions were criticized ([Altemeyer, 1981](#)). Later it was argued that the quantitative approach of US social and behavioral sciences had been reductionistic (e.g., [Stone et al., 1993](#); [Lederer & Schmidt, 1995](#); [Funke, 2003](#); [Aho, 2020](#); [Henkelmann et al., 2020](#)).

## RWA: Critiques and Developments

With the changing zeitgeist, the psychodynamic concept of TAP gave way to cognitive-psychological approaches (see [Funke, 2003](#)). [Altemeyer \(1981, 1988, 1996\)](#) adopted a pragmatic, data-driven approach and shortened the scale to the three covarying dimensions of conventionalism, authoritarian aggression, and authoritarian submission, replacing the psychoanalytic foundation with Bandura's social learning theory.

Altemeyer's RWA scale consists of about 30 counterbalanced items. For a long time, it was considered the standard in measuring authoritarianism ([Christie, 1991](#); [Funke, 2003](#)), serving as a valuable predictor of right-wing and outgroup derogatory attitudes and behaviors ([Duckitt, 2022](#) provides an overview). Over the last two decades, the general concept of RWA, as well as its operationalization by Altemeyer, has faced growing criticism, including the use of unrepresentative samples, tautological overlap with its criteria ([Feldman, 2003](#); [Oesterreich, 2005](#); [Dunwoody & Funke, 2016](#); [Engelhardt et al., 2023](#)), limited differentiation from conservatism ([Feldman, 2003](#); [Oesterreich, 2005](#)), and operationalizing a three-factor construct with a unidimensional scale ([Funke, 2003](#); [Van Hiel et al., 2007](#)). Overall, Altemeyer's approach has been criticized for prioritizing methodological refinements over theoretical depth ([Lederer & Schmidt, 1995](#); [Henkelmann et al., 2020](#)).

To address these shortcomings, a wide range of authoritarianism scales has emerged, the acronyms of which are not easy to tell apart: there is the RWA<sup>3D</sup> scale ([Funke, 2003](#)), the *Child Rearing Values* (CRV) scale ([Feldman & Stenner, 1997](#)), the *Authoritarian Submission Conventionalism* (ASC) scale ([Dunwoody & Funke, 2016](#)), the Social Conformity-Autonomy Beliefs (SCA) Scale ([Feldman, 2003](#)), the *Authoritarianism-Conservatism-Traditionalism* (ACT) scale ([Duckitt et al., 2010](#)), the *Very Short Authoritarianism* (VSA) scale ([Bizumic & Duckitt, 2018](#)), the *Kurzskala Autoritarismus* (Short Authoritarianism Scale; KSA; [Beierlein et al., 2014](#)), the *Aggression-Submission* (AS) scale ([Van Hiel et al., 2007](#)), and the *Group Authoritarianism* (GA) scale ([Stellmacher & Petzel, 2005](#)), among others. As noted by [Dunwoody and Funke \(2016\)](#), most of these scales capture "Altemeyer's big Three" (p. 574). While addressing major problems, none is free from all criticisms (Appendix A.2).

There are other alternative theoretical approaches alongside RWA: [Oesterreich \(e.g., 1996, 2005\)](#) described the authoritarian reaction as a coping strategy in response to insecurity and overwhelm. [Feldman \(2003\)](#) situated authoritarianism within the social

conformity-autonomy dimension, identifying the tension between these poles as the key dynamic behind authoritarianism, with prejudicial behavior as a consequence of threats to social norms. Duckitt (2001, 2006), in his Dual Process Motivational Model (DPM), conceptualized authoritarianism as ideological attitudes rooted in a view of the world as dangerous and unpredictable, with perceived threats to social order activating a security motivation and identification with norms and traditions, ultimately fostering prejudice. These approaches highlight the psychological complexity of authoritarianism, indicating gaps in RWA. We argue that contemporary right-wing populist movements incorporate elements that challenge explanation through classic RWA alone:

### The Missing Emotional Component

Classical RWA emphasizes cognitive rather than emotional components, failing to explain why right-wing leaders hold such emotional appeal for people (Dunwoody & Funke, 2016). Alternative approaches, in fact also mentioned but not further elaborated by Altemeyer (1996, pp. 40-41, p. 100), incorporate the role of fear or insecurity with authoritarianism alleviating psychological discomfort, reminiscent of Fromm's "prosthetic security" (Fromm, 1936) of authoritarianism. But anxiety alone cannot explain right-wing movements, as it neglects the crucial role of aggression (Altemeyer, 1981; Dunwoody & Funke, 2016) which cannot be reduced to the generalized hostility proposed by Oesterreich (e.g., 2005). The framework of TAP exceeds classical RWA by integrating irrational processes of projection, fear of sensitivity, a pessimistic view of humanity and the world, and a focus on strength and power.

### The Non-Contemporaneity of the Norm-Conforming, Submissive Authoritarian

In contrast to RWA's submissive, norm-conforming concept, an inherent characteristic of modern right-wing movements is that they challenge norms and traditional authority (Vehrkamp & Merkel, 2020). Examples include opposition to COVID-19 restrictions, climate change denial, and advocacy of socially unaccepted conspiracy theories (Decker & Brähler, 2020; Amlinger & Nachtwey, 2022). Rather, they practice selective submission to leaders who emphasize strength over diplomacy (Dunwoody & Funke, 2016), such as Putin, Bolsonaro, Xi, or Trump (Rachman, 2022). This pattern is not new, as historical examples like the Weimar Republic show that authoritarian individuals have often rejected established authorities while embracing strong leaders (Wildt, 2012). In Germany, however, current right-wing leaders like Alice Weidel do not seem to be fueling this personality cult. Instead, submission appears to shift toward neoliberal values. Decker (2019) describes a secondary authoritarianism, with Germany's economic strength replacing traditional authority. In a qualitative approach, Amlinger and Nachtwey (2022), building on Adorno's typology, identify a libertarian authoritarianism and describe individuals frustrated by unmet neoliberal promises rejecting authorities and submitting to their

own freedom. Drawing on these observations, we argue for a broader understanding of authoritarianism, as originally conceptualized in the TAP.

### **Additional Explanatory Value of the California F Scale's Omitted Facets**

We are not the first to note that TAP holds significant value and appears even more relevant in light of current developments (e.g., [Decker & Brähler, 2020](#); [Henkelmann et al., 2020](#); [Jost, 2021](#); [Dilling et al., 2024](#)). In terms of projectivity and superstition, [Decker and Brähler \(2020\)](#) propose a two-factor model in which projectivity, an overarching term for conspiracy mentality and superstition, and RWA together form the authoritarian syndrome. With regard to Anti-Intracception, literature shows correlations of RWA and low emotional competencies ([Van Hiel et al., 2019](#)), creativity ([Rubinstein, 2003](#)), and openness to experience ([Perry & Sibley, 2012](#)). Its association with sexism and rigid gender roles ([Duckitt & Sibley, 2017](#)) is reminiscent of the Sex facet. Among contemporary movements, one can observe hypermasculine self-presentation and aggression ([Rachman, 2022](#)), reminiscent of Power and Toughness, and a fear of status loss ([Walther & Isemann, 2019](#)), group-based misanthropy ([Zick et al., 2016](#)), and violent and depressive tendencies ([Decker & Brähler, 2020](#)), reminding of Destructiveness and Cynicism.

### **The Present Research**

The aim of our research was to construct and validate a *Modern Comprehensive F Scale* (MCF-9) in Germany and the U.S. These countries are historically linked to TAP, and are now modern democracies facing polarization and right-wing radicalization ([Caiani et al., 2012](#)). In terms of convergent validity, we expected positive correlations between MCF-9 and RWA. For criterion validity, we anticipated positive associations with sympathy for the right-wing extremist party AfD in Germany, and a preference for right-wing politicians in the U.S. In both countries, we expected positive associations with right-wing self-placement, (anti-)democratic attitudes, xenophobia, antisemitism, and donation preferences for charities with a right-wing leaning. Finally, we assumed incremental validity of MCF-9 beyond RWA in all dependent variables. With regard to broader debates, exploratory analyses examined the relationship with conspiracy mentality (e.g., [Dilling et al., 2023](#)), Social Dominance Orientation (SDO; e.g., [Duckitt, 2022](#)), and far-left attitudes (e.g., [Altemeyer, 1996](#)).

### **Generating the Item Pool**

A pool of 97 items was created by members of the Department of Psychology of the University of Bonn through a rational construction process grounded in the theoretical concepts of [Adorno et al. \(1950\)](#). We drew on original items from Altemeyer (e.g., 1996), [Adorno et al. \(1950\)](#), and our previous work ([Heidemeyer et al., 2025](#)), but also developed new items, ensuring through extensive discussions that the original conception was

preserved (Appendix A.3). To ensure content validity, we consulted 14 researchers specialized in political psychology to provide feedback in a blind pretest that we evaluated using quantitative and qualitative assessments. After excluding poorly rated and ambiguous items, the final item pool consisted of 84 items.

## Method

Data were analyzed using several statistical methods, including confirmatory factor analysis (CFA), measurement invariance testing, and both correlational and regression analyses. Both studies were introduced as surveys on sociopolitical attitudes. Data were collected in summer 2023 (Germany) and summer 2024 (U.S.) on the platform SoSci Survey via social media. We targeted social media groups that we identified as right-wing, in order to achieve an oversampling of right-wing individuals. Additionally, we ran paid Facebook ads featuring a flyer designed to appeal to politically dissatisfied individuals. Participation was voluntary, without monetary compensation, but incentivized through a raffle for online store vouchers; German psychology students could receive course credit. Participants had to meet the minimum voting age (16 in Germany, 18 in the U.S.) and reside in their country. Informed consent was obtained beforehand.

## Samples

### German Sample

The original German sample included 745 participants. As preregistered, exclusions were made for incomplete questionnaires ( $n = 234$ ), self-reported poor data quality ( $n = 38$ ), short response times ( $< 300$  seconds;  $n = 1$ ), and multivariate outliers indicating careless responding (Mahalanobis distance  $> 30$ ;  $n = 1$ ), leaving 469 participants. Of these, 47.1% were female, and 1.3% gender-diverse. The mean age was 53 years ( $SD = 17.64$ ; range 16–88). Educational levels included 36% with secondary school (Mittlere Reife) or lower, 24.5% with Abitur, and 39.4% holding at least a bachelor's degree. A migrant background was reported by 9.4%.

### U.S. Sample

The initial U.S. sample included 615 participants. After exclusions for incomplete data ( $n = 263$ ), low data quality ( $n = 9$ ), careless responding (Mahalanobis distance  $> 42$ ;  $n = 15$ ), and fictitious politicians ( $n = 25$ ), 314 participants remained. Of these, 39.8% were female, and 3.2% gender-diverse. The mean age was 63 years ( $SD = 18.34$ ; range 18–93). Educational levels included 29.3% with a high school diploma or lower and 70.7% holding at least a college degree. The majority identified as White/Caucasian (86.3%).

## Instruments

All measures were assessed on five-point Likert scales ranging from 1 = *strongly disagree/no sympathy* to 5 = *strongly agree/strong sympathy*.

### Authoritarianism

We used MCF-9 (Table 1) and two established RWA scales. In Germany, we applied the 9-item KSA-3 scale (*Kurzskala Autoritarismus*; Beierlein et al., 2014), a three-dimensional measure used in large representative studies. For the U.S., we employed the three-dimensional 15-item ASC scale (*Aggression-Submission-Conventionalism*; Dunwoody & Funke, 2016), extensively used and validated in the US context.

**Table 1**

*Psychometric Properties of MCF-9.*

Subscale	Item	Germany		U.S.		
		$p_m$	$r_{ic}$	$p_m$	$r_{ic}$	
<b>Anti-intrapeption</b>	Learning a practical vocation is more beneficial to society than theoretical studies. <i>Das Erlernen eines praktischen Berufes bringt der Gesellschaft mehr als ein theoretisches Studium.</i>	.64	.54	.65	.61	
<b>Superstition and stereotypy</b>	I trust in science. <i>Ich habe Vertrauen in die Wissenschaft.</i>	r	.33	.49	.28	.61
<b>Power and toughness</b>	Children have to be shaped by a firm hand. <i>Kinder müssen durch eine harte Hand geformt werden.</i>	.24	.56	.56	.69	
<b>Destructiveness and cynicism</b>	When push comes to shove, those who are prepared will survive. <i>Wenn es hart auf hart kommt, werden diejenigen überleben, die vorbereitet sind.</i>	.59	.49	.64	.58	
<b>Projectivity</b>	We need to be prepared for a wave of break-ins, robberies and other crimes in the future. <i>Wir müssen uns in Zukunft auf eine Welle von Einbrüchen, Überfällen und anderen Verbrechen gefasst machen.</i>	.58	.72	.55	.72	
<b>Sexuality and gender roles</b>	The discussions about sexual harassment have led to a situation where even friendly gestures and compliments are hyped up as “sexual assault”. <i>Die Diskussion über sexuelle Belästigung hat dazu geführt, dass selbst freundliche Gesten und Komplimente zum „sexuellen Übergriff“ aufgebauscht werden.</i>	.62	.68	.58	.72	

Subscale	Item	r	Germany		U.S.	
			$p_m$	$r_{ic}$	$p_m$	$r_{ic}$
<b>Authoritarian Aggression</b>	Social support does more than harsh prison sentences. <i>Soziale Unterstützung bringt mehr als harte Gefängnisstrafen.</i>	.56	.68	.50	.57	
<b>Authoritarian Submission</b>	The democratic politicians of today are better than the dictators of the past. <i>Moderne, demokratische Politiker sind besser als frühere Diktatoren.</i>	.33	.56	.43	.55	
<b>Conventionalism</b>	The conservative values and norms are still the best way to live. <i>Die konservativen Werte und Normen sind nach wie vor der beste Weg zu leben.</i>	.49	.62	.50	.82	

Note.  $N = 469$  (Germany);  $N = 314$  (U.S.);  $p_m$  = item difficulty;  $r_{ic}$  = corrected item total correlation;  $r$  = reverse coded. Formal English and German translation in Italics.

## Right-Wing Policies

In Germany, we assessed participants' sympathy for the six major parties represented in the German parliament: the conservative Christian Union (CDU), the social democrats (SPD), the liberal party (FDP), the left-wing party (DIE LINKE), the green party (Bündnis 90/die Grünen), and the right-wing populist party (AfD). In the U.S., we assessed participants' agreement with the positions of six prominent politicians<sup>1</sup>: ranging from far-right Donald Trump and Marjorie Taylor Greene, and more moderate conservative Mitt Romney. Left-wing progressive positions were represented by Alexandria Ocasio-Cortez and Ilhan Omar, and Bernie Sanders. In both countries, a single item queried political orientation on a scale from 1 (left) to 5 (right). German participants filled out a 5-item questionnaire on Democratic attitudes (Küpper, 2021); U.S. Participants filled out a 17-item questionnaire on far-right attitudes (Walther et al., 2024).

## Xenophobia and Antisemitism

In Germany, we employed the 18-item *Questionnaire on Right-Wing Extremist Attitudes – Leipzig Form* (FR-LF; Decker et al., 2013; Heller et al., 2020), which captures xenophobia and antisemitism as two dimensions of right-wing extremism, each measured by three items. In the U.S., the 5-item *Fear-Based Xenophobia* scale (van der Veer et al., 2013) and the 12-item *Generalized Antisemitism Scale* (Allington et al., 2022) were used.

1) The index provides a simplified measure of directional political preference that does not reflect all ideological nuances. For instance, a person with a right-wing or populist orientation may also express sympathy for Bernie Sanders due to shared populist rhetoric, which could slightly lower their score. However, the overall directional tendency remains robust.

## Donation Behavior

Participants selected one of three organizations for a 50-euro/50-dollar donation, with each option reflecting a specific political orientation (Skopp, 2021; Heidemeyer et al., 2025). The left-leaning option was the *National Association for the Advancement of Colored People* (NAACP) and *Sea Watch e.V.* The neutral option was the *American Red Cross* (ARC) and *SOS Kinderdörfer* (SOS Children's village). The right-leaning option was the *National Rifle Association* (NRA) and the *Volksbund Deutscher Kriegsgräberfürsorge* (German War Grave Commission).

## Other

To explore relationships with relevant constructs, we assessed a 5-item conspiracy mentality scale (Bruder et al., 2013; only Germany), the 8-item SDO Scale (Ho et al., 2015; only USA), and a 12-item left-wing scale (Jungkunz, 2019).

## Transparency and Openness

Data, codes, additional analyses, and preregistrations can be accessed at OSF: <https://osf.io/fkbmy>.

# Results

## Scale Construction

The item pool demonstrated excellent internal consistencies (Germany:  $\omega = .97$ ; USA:  $\omega = .96$ ). Following the unidimensional approach indicated by previous findings (Heidemeyer et al., 2025) and exploratory factor analyses (Appendix B.5), items were reduced iteratively based on item analysis, theoretical relevance, and linguistic clarity. We prioritized items with high discriminative powers, high variances, and moderate item difficulties, but we retained some low and high difficulty items to represent the full trait continuum.

In the German study, we first developed a unidimensional 27-item prototype (MCF-27, validation in Appendix B.2), with each of the nine facets represented by three items. To prepare for the U.S. study, this version, along with additional reserve items (totaling 35 items), was translated into English using formal forward-backward translation (OSF) by two native speakers, both researchers with expertise in political science and psychology. Based on data from the U.S. study, the scale was further refined through iterative item analysis, involving a trade-off between psychometric properties, the retention of as many reverse-keyed items as possible, and completeness. Item difficulty and item discrimination are important psychometric indicators in scale construction. Item difficulty refers to how easy or hard an item is for the target population; Item discrimination reflects the correlation between an item's score and the total score of the scale, indicating how well the item differentiates between participants with different levels of

the underlying construct. This process resulted in the final 9-item MCF-9 (Table 1) with strong internal consistencies ( $\omega = .87$  in Germany;  $\omega = .90$  in the U.S.).

## Descriptive Analyses

Reflecting our recruitment strategy, the German sample showed the AfD as the most popular party ( $M = 2.44$ ,  $SD = 1.67$ ), with 32.2% expressing strong sympathy (scores > 3). On a left-right spectrum, 23.9% identified as right-leaning (scores > 3). The majority chose to donate to *SOS Children's Villages* (59.1%), followed by *Sea-Watch* e.V. (22.2%) and the *German War Graves Commission* (18.8%). The U.S. sample self-positioned center to right ( $M = 3.02$ ,  $SD = 1.33$ ), with no clear preference for the Republican ( $M = 2.71$ ,  $SD = 1.54$ ) or Democratic ( $M = 2.72$ ,  $SD = 1.52$ ) parties. Sanders was the most popular politician ( $M = 2.87$ ,  $SD = 1.61$ ), and Greene the least popular ( $M = 2.21$ ,  $SD = 1.47$ ). Donations favored the neutral *ARC* (58.9%), followed by the *NAACP* (22%) and *NRA* (19.1%).

## Confirmatory Factor Analysis

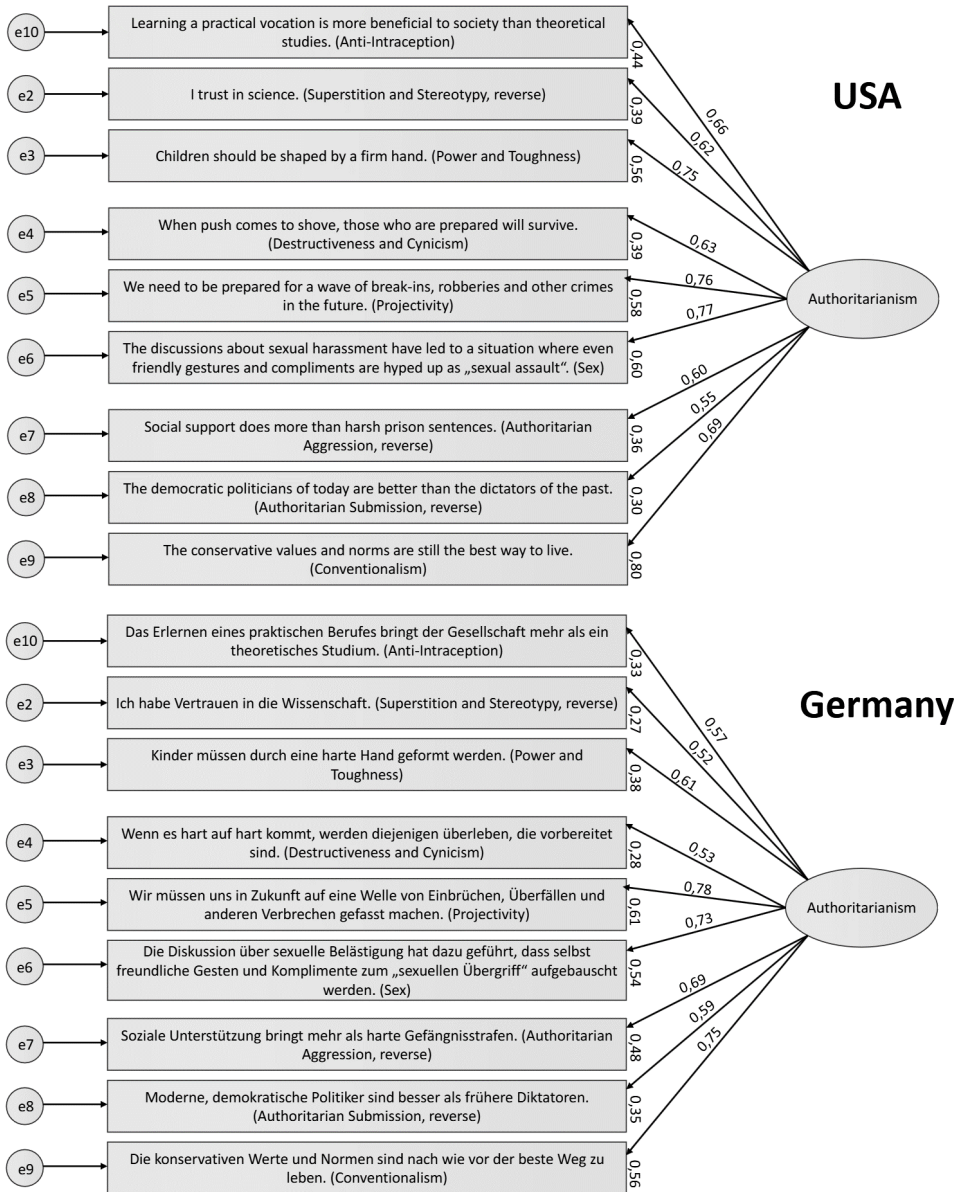
The measurement model<sup>2</sup> for MCF-9 (Figure 1, Table 2) included nine observed indicators loading onto a single latent factor. Maximum likelihood estimation was used to assess model fit, with bootstrapping (1,000 samples) addressing non-normality detected by the Doornik-Hansen test (Doornik & Hansen, 2008; Germany:  $\chi^2(18) = 311.56$ ,  $p < .001$ ; USA:  $\chi^2(18) = 172.38$ ,  $p < .001$ ). The  $\chi^2$  test indicated significant misfit (Germany:  $\chi^2(27) = 87.43$ ,  $p < .001$ ; USA:  $\chi^2(27) = 83.30$ ,  $p < .001$ ), reflecting the test's sensitivity to large sample sizes. Alternative fit indices provide a more accurate evaluation. For Germany, the CFI = .96, TLI = .94, SRMR = .04, and RMSEA = .07, 90% CI [0.05, 0.09],  $p$ -close = .025 indicated satisfactory fit. Standardized factor loadings ranged from .52 to .78, all significant ( $p < .001$ ), explaining 27–61% of variance across facets. For the USA, the CFI was .96, TLI = .94, SRMR = .05, and RMSEA = .08, 90% CI [0.06, 0.10],  $p$ -close = .005. Loadings ranged from .55 to .89 ( $p < .001$ ), explaining 30–80% of variance. Bootstrap analyses confirmed parameter stability, with no improper solutions or Heywood cases.

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2) Full Information Maximum Likelihood (FIML) was conducted as a robustness check (Enders, 2025), but results did not differ from those reported.

**Figure 1**

*Measurement Models of MCF-9*



Note. N = 314 (U.S.); N = 469 (Germany). The coefficients are standardized.

**Table 2***Characteristics of the MCF-9 Measurement Models*

Item	$\beta$		SE		C.R.	
	USA	Germany	USA	Germany	USA	Germany
Anti-Intracception	.66**	.57**	.04	.06	3.43	11.87
Superstition & Stereotypy	.62**	.52**	.04	.06	12.31	10.69
Power & Toughness	.75**	.61**	.04	.05	6.05	12.74
Destructiveness & Cynicism	.63**	.53**	.04	.06	12.44	10.87
Projectivity	.76**	.78**	.05	.07	16.64	16.31
Sex	.77**	.73**	.05	.07	17.10	15.30
Authoritarian.Aggression	.60**	.69**	.05	.06	11.66	14.37
Authoritarian Submission	.55**	.59**	.06	.07	10.47	12.18
Conventionalism	.89**	.75**	fixed	fixed	fixed	fixed

Note.  $N = 469$  (Germany);  $N = 314$  (U.S.);  $\beta$  = standardized regression coefficient, SE = standard error, C.R. = Critical Ratio. The highest factor loading was fixed to 1.

\*\* $p < .01$ . \* $p < .05$  (two-tailed).

Tests for measurement invariance between the two countries using multigroup CFA showed an acceptable fit for the configural model and for the metric model, but not for the scalar model. Overall, these results support the comparability of the scale across both samples, however suggesting that mean comparisons between the countries may be problematic. An approximate invariance test using the alignment method indicated that approximate measurement invariance could be assumed (see Appendix A.8 for details).

## Correlation Analyses

Politician preferences (USA) were transformed into a difference score, with higher values indicating a preference for right-wing politicians. Donations were recoded as binary, excluding the neutral organizations (Germany: SOS Children's Village,  $n = 277$ ; USA: American Red Cross,  $n = 185$ ). To simplify, we use the label "Right-Wing Politics" to refer to both: AfD sympathy (Germany) and right-wing politician preferences (USA), and the label "(Anti-)Democratic Attitudes" for attitudes toward democracy (Germany) and far-right attitudes (USA).

**Table 3**

*Descriptive Statistics, Intercorrelations, and Reliabilities of Study 1 and Study 2 Measures*

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. MCF-9	2.95 (3.09)	.92 (.99)	.87; .90	.71**	.74**	-.15**	.77**	.75**	.75**	.88**	.90**	.90**	.19**	.90**	-.48**	.84**
2. RWA-Total <sup>b</sup>	2.65 (2.74)	.81 (.59)	.72**	.85; .84	.86**	.37**	.84**	.69**	.66**	.70**	.69**	.69**	.09	.69**	-.52**	.67**
3. RWA-Aggression <sup>b</sup>	2.74 (2.91)	1.05 (.94)	.64**	.87**	.76; .82	-.00	.68**	.70**	.66**	.73**	.72**	.72**	.03	.73**	-.52**	.70**
4. RWA-Submission <sup>b</sup>	2.30 (2.06)	.83 (.68)	.30**	.73**	.47**	.56; .76	-.02	.01	-.04	-.11	-.09	-.09	.19**	-.17**	-.12*	-.25**
5. RWA-Conventional <sup>b</sup>	2.90 (3.24)	1.07 (.86)	.78**	.85**	.63**	.42**	.81; .84	.65**	.70**	.73**	.72**	.72**	-.00	.75**	-.60**	.73**
6. SDO <sup>b</sup>	(2.40)	(.91)					.87		.65**	.75**	.80**	.80**	.24**	.81**	-.52**	.76**
7. Conspiracy Mentality <sup>b</sup>	3.31	1.15	.76**	.53**	.45**	.19**	.62**		.40**	—	.79**	.72**	.07	.79**	-.51**	.72**
8. Self-Placement (+)	2.79 (3.02)	1.06 (1.33)	.62**	.57**	.52**	.32**	.53**		.63**	.55**	—	.83**	.12*	.88**	-.64**	.87**
9. Right-Wing Politics <sup>b</sup>	2.44 (-.12)	1.67 (2.35)	.74**	.53**	.48**	.19**	.58**		.69**	.59**	.74**	.92; .95	.27**	.91**	-.43**	.82**
10. Xenophobia <sup>b</sup>	2.71 (2.87)	1.44 (1.42)	.82**	.72**	.63**	.34**	.74**		.47**	.29**	.39**	.51**	.85; .91	.17**	.24**	.13
11. Antisemitism <sup>b</sup>	1.49 (1.67)	.81 (.84)	.48**	.43**	.36**	.23**	.44**		-.45**	-.40**	-.51**	-.58**	-.36**	.61; .90	-.53**	.87**
12. (Anti)Democratic Att. <sup>b</sup>	3.91 (2.77)	.73 (.93)	-.54**	-.44**	-.41**	-.23**	-.40**		.03	-.54**	-.28**	-.24**	.02	.18**	.82; .91	-.69**
13. Far Left Scale	3.26 (2.95)	.77 (.76)	-.30**	-.26**	-.25**	-.16**	-.23**		.56**	.72**	.76**	.78**	.46**	-.58**	-.50**	—
14. Right-wing Donation <sup>b</sup>	—	—	.79**	.69**	.60**	.39**	.73**									

*Notz.* N = 469 (Germany), N = 314 (U.S.); (Anti)Democratic Att. = (Anti-)Democratic Attitudes. All scales range from 1 to 5. McDonald's Omega is reported in bold on the diagonal, with German values listed first. German results are shown to the left of the diagonal, and U.S. results to the right in a lighter typeface. Means (M) and standard deviations (SD) are provided for both countries, with U.S. values in parentheses.

\*\*p < .01. \*p < .05 (two-tailed).

<sup>a</sup>Variables assessed only in one country. <sup>b</sup>The respective labels represent different German and U.S. measures that are presented under a single label, as they capture similar constructs and were combined for clarity and space efficiency in the table

Table 3 presents Pearson correlations between the variables. As expected, MCF-9 is strongly positively correlated with the RWA total scores (Germany:  $r = .72$ ; USA:  $r = .71$ ), and the dimensions of conventionalism and authoritarian aggression ( $r = .64$  to  $r = .78$ ). The correlation with submission is lower in Germany ( $r = .30$ ) and unexpectedly negative in the U.S. ( $r = -.15$ ). We observe high positive correlations with right-wing, antidemocratic, and outgroup derogatory attitudes ( $r = .48$  to  $.90$ ), despite a lower correlation with antisemitism in the U.S. ( $r = .19$ ). MCF-9 correlates negatively with the left-wing scales (Germany:  $r = -.30$ ; USA:  $r = -.48$ ), and strongly positive with SDO ( $r = .75$ ) and conspiracy mentality ( $r = .76$ ).

## Regression Analyses

We conducted hierarchical multiple regression analyses, introducing the three RWA subscales separately into the analyses considering the unique variance contributed by each facet. Including age and gender as controls did not alter the results (Appendix A.3.1).

MCF-9 was a strong predictor across all dependent variables, accounting for significant amounts of variance in right-wing politics (Germany: 54%, USA: 77%), self-positioning (Germany: 39%, USA: 57%), xenophobia (Germany: 66%, USA: 81%), and (anti-)democratic attitudes (Germany: 29%, USA: 81%). For antisemitism, it explained 23% in Germany and 3% in the USA, with RWA and MCF-9 combined accounting for 17% in the U.S. The scale demonstrated incremental validity, outperforming the KSA and ASC scales ( $VIF_{\text{Germany}} = 2.09$ ,  $VIF_{\text{USA}} = 2.00$ ) by accounting for additional variance in right-wing preferences (Germany: 17%, USA: 14%), self-positioning (8%), xenophobia (Germany: 11%, USA: 20%), antisemitism (Germany: 4%, USA: 14%), and (anti-)democratic attitudes (Germany: 10%, USA: 15%). Notably, MCF-9 demonstrated incremental validity even beyond RWA and conspiracy mentality combined (Appendix A.6).

## Discussion

This paper has introduced the *Modern Comprehensive F Scale* (MCF-9), a 9-item measure shorter than many modern RWA scales, incorporating six additional components beyond RWA, and accounting for additional variance in predicting right-wing political and outgroup derogatory attitudes—supporting the view that authoritarianism extends beyond current measures.

## The Psychometric Quality of MCF-9

With standardized administration ensuring consistent data collection, and a numerical scoring process minimizing subjective interpretation and enhancing comparability, MCF-9 meets the criteria for implementation, scoring, and interpretational objectivity. In

terms of reliability, the very good internal consistency is remarkable for a heterogeneous and short scale like MCF-9. Content validity was assessed through a rational scale construction process and confirmed by a blind expert rating. In terms of construct validity, our scale was associated with a range of criteria closely aligned in the nomological network (e.g., RWA, SDO), and negatively associated with constructs considered distant (e.g., democratic or left-wing attitudes). However, we did find a small, but significant negative association with the submission facet in the U.S., possibly reflecting our efforts to modernize the facet (Appendix A.3) and indicating that our scale captures more rebellious forms of authoritarianism. Furthermore, our results indicate that, like RWA, MCF is specific to the right-wing political spectrum. Regarding factor validity, a unidimensional model was confirmed with reasonable fit indices and substantial factor loadings. Evidence for MCF's concurrent validity (criterion validity) showed it to be a significant predictor of right-wing, (anti-)democratic, and outgroup derogatory attitudes, with  $R^2$  values reaching up to .66 in Germany and .81 in the US.

Most importantly, MCF-9 demonstrated substantial incremental validity to two established RWA scales (up to 17%–20%). This result confirms that the MCF-scale is a psychometrically sound and useful measure of authoritarianism.

## Limitations and Future Implications

The inclusion of conservatism within the conventionalist facet may invite criticism. However, rather than interpreting conservatism as an inflation, we argue that it represents an inherent and meaningful aspect of authoritarianism (see Adorno et al., 1950, pp. 658–675). This aligns with Duckitt et al. (2010), who also integrate conservatism into their concept, but we argue, like Dunwoody and Funke (2016), that it relates more to conventionalism than submission.

Reverse-keyed items demonstrated satisfactory discrimination, minimizing the trade-off between reliability and balance. With one-third of the items balanced, the scale addresses a key criticism of the *California F Scale* (e.g., Christie, 1991). However, it can be criticized that we did not develop psychometric 'twins' or systematically compare reverse and non-reverse items across populations (Altemeyer, 1981; Oesterreich, 1996, 2005).

With regard to the implementation process, we acknowledge that sequence effects cannot be entirely ruled out, as the political attitude questions preceded the donation decision, potentially influencing responses toward consistency with prior attitudes, though we expect this effect to be small. Furthermore, as we aimed to examine relations between variables rather than make statements about populations, our emphasis was not on representative samples but on ensuring sufficient variance in the relevant characteristics for more accurate detection of these relationships. While oversampling mitigated representativeness issues, left-wing organizations and politicians remained popular. For generalizability, MCF-9 should be tested in large-scale, representative studies. As a further limitation, validation using external criteria through correlations and regressions is not

corrected for measurement error. To address this limitation, we also conducted structural equation modeling (SEM) analyses, as detailed in Appendix A.7. Our unidimensional approach may also be subject to criticism. Multidimensional scales like the KSA-3 (Beierlein et al., 2014) and the ASC scale (Dunwoody & Funke, 2016) allow for a more targeted assessment. Furthermore, previous research has demonstrated that multidimensional RWA measures provide greater explanatory power than unidimensional ones (e.g., Duckitt et al., 2010; Dunwoody & Funke, 2016). Although our unidimensional MCF-9 might forgo these benefits, its incremental validity over two multidimensional scales suggests that this concern is not critical. Still, future research could try to construct a multidimensional MCF scale with additional items (Appendix B.5), structured either as a second-order or general factor model. We presented an unidimensional factor structure because (1) a multidimensional model lacked conceptual clarity, and (2) it fitted our data well. This aligns with notions that a nine-dimensional solution lacks coherence (Iser, 2006) and Adorno et al.'s concept of an "over-all syndrome" (p. 751). The holistic, unidimensional approach allowed us to create a concise and economical instrument, that is suitable for large-scale surveys due to its brevity, while enabling the measurement of the construct's complexity and breadth.

Future research could address our scale's relationship to RWA, SDO and Duckitt's (2001, 2006) DPM. While Duckitt describes RWA and SDO as distinct constructs, Altemeyer (1998) views them as two sides of authoritarianism: authoritarian dominance (SDO) and authoritarian aggression (RWA). The SDO scale mainly reflects the rejection of group equality and endorsement of group dominance (Ho et al., 2015), also captured in Power and Toughness. Given the high correlations observed, MCF-9 may be the broader core underlying RWA and SDO, fitting its equally strong correlations.

Moreover, we expect a nomological proximity between MCF-9 dimensions and contemporary concepts of authoritarianism (Amlinger & Nachtwey, 2022; Decker & Brähler, 2020), requiring further empirical investigation.

A critical goal is also to explore MCF's variability and malleability over time. Critical Theory is not abstract research, but a social critique of the conditions that foster authoritarian dynamics (Decker et al., 2024). These dynamics can be amplified by the uncertainties in competitive neoliberal societies (Oesterreich, 2005; Decker & Brähler, 2020) and relative deprivation, and may possibly be mitigated through equal conditions and participation (Dilling et al., 2024; Walther et al., 2024).

## The Added Value of the Modern Comprehensive F Scale

The *Authoritarian Personality* was published over 75 years ago. After numerous publications and theoretical approaches, the question about the core, explaining factor (Funke, 2003) of authoritarianism remains unresolved. Theories consistently highlight the role of fear, overwhelm, and threat. A negative view on humanity and the world may foster these feelings, and projection, emphasis on power and toughness, belief in conspiracies

and superstitions, as well as anti-intracception may emerge as coping strategies. This study aimed to deepen the understanding of these underlying dynamics, addressing the emotional appeal of right-wing movements (Dunwoody & Funke, 2016), and providing a new measure for future research to encounter them.

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**Ethics Statement:** The study was conducted following the Declaration of Helsinki, the American Psychological Association Ethical Principles of Psychologists and the ethical guidelines of the German Society for Psychology. As the project did not involve deception, vulnerable populations, invasive procedures or drugs, the study needed no special approval by the ethics committee of the Department of Psychology of the University of Bonn.

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**Data Availability:** Data and analysis code are freely available on the OSF (see Sorrentino et al., 2025).

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## Supplementary Materials

Data and analysis code are freely available on the OSF (see Sorrentino et al., 2025).

### Index of Supplementary Materials

Sorrentino, A., Prott, K., Hoffmann, L., Grau, I., Banse, R., & Heidemeyer, P. (2025). *A new measure of Authoritarianism: Development and validation of the Modern Comprehensive F Scale in Germany and the U.S* [Data, Code]. OSF. <https://osf.io/fkbmy>

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