

Understanding the Full Landscape of Values and Superordinate Goal Content: An Empirical Integration of Past Models in the American Cultural Context

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Understanding the nature of the values and superordinate goals is both fascinating and highly consequential. Yet, existing taxonomies diverge in numerous respects, creating a barrier to scientific progress. To come to a fuller understanding, we conducted an integrated empirical analysis. We systematically gathered value-descriptive phrases from numerous past influential measures and item sets, standardized them to a common format, and eliminated redundancies, resulting in 359 items. We then asked two large samples of American adults to rate their commitment to these values, including a convenience sample ($n = 312$) and census-matched sample ($n = 506$). Analyses indicated that their structure can be parsimoniously described in terms of five broad domains: individual mastery, social rank, interpersonal relatedness, cultural conventionality, and universal justice. This solution was robust across samples and across many variations in analytic technique. Further analyses suggested that 13 more specific facets can be located within and between these domains, providing a more detailed description. This provides an organizing framework that should allow researchers examining different theories to more easily compare their findings. Further research is certainly needed to examine the generalizability of this structure across cultures. Nonetheless, the current investigation provides an important initial step by providing an integrated description of the structure of values in a Western, educated, industrialized, rich, and democratic cultural context from which many prior models originated.

Keywords: values, motives, morality, goals, psychometrics

What are the broad principles that guide our lives and give them purpose? The answer to this question is both fascinating and highly consequential. Theoretically, the intentional pursuit of goals has been described as the second “layer” of personality (beyond traits), which allows a person to act as a “motivated agent” and exert volitional control over their lives (McAdams, 2013). More practically, the pursuit of superordinate goals and values can allow a person to improve numerous aspects of lives, including their academic and occupational performance (e.g., Elliot & McGregor, 2001), physical health (e.g., Niemiec et al., 2009), close relationships (e.g., Gable & Impett, 2012), psychological well-being (e.g., Bradshaw et al., 2023), and traits (Hudson et al., 2020), among other outcomes. At a more philosophical level, the superordinate goals and values that people (in general) commit themselves to also speak to broader questions of human nature (Schaller et al., 2017). It tells us if people strive toward conflict (i.e., “A war of every man against every man”; Hobbes, 1651/2024), rational self-interest (e.g., Smith, 1776/2016), love (e.g., Bowlby, 1969/1983), personal growth (e.g., Rogers, 1961/1995), or other possibilities.

However, researchers attempting to understand the landscape of superordinate goals and values currently face a quandary. As one surveys the literature, one encounters an overabundance of models

which often fail to converge. Constructs which appear in one model are absent in another. There are blurry and variable boundaries between constructs. Sometimes, similar names are used to describe different constructs. Other times, different names are used to describe similar constructs. This creates an obvious barrier to scientific progress.

To address these issues, we systematically gathered phrases that describe superordinate goals and values from numerous past influential measures, standardized them to a common format, and asked two large samples of American adults (including a census-matched sample) to rate their commitment to each. The results of this investigation thus provide a fuller, integrated view of the motivational landscape within the American cultural context by revealing shared, underlying dimensions of superordinate goal content.

What Is a Superordinate Goal or Value? Defining the Central Construct of Interest

Before reviewing past models in greater detail, it is important to first formally define the central construct of interest—“conscious, superordinate goals” or “values.” Following prior definitions (Austin & Vancouver, 1996; Cantor et al., 1986; Elliot & Fryer, 2008; Emmons, 1986; Gollwitzer & Moskowitz, 1996; Klinger, 1977; Little, 2015;

Marie Hennecke served as action editor.

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Verbatim method files, data, analytic code, additional online tables, and a results section are available at <https://osf.io/4utjg/>. The authors thank Aiden Carnahan, Brenden Schatz, Delio Carducci, and Trey Waldron for their work standardizing items from past instruments for use in these studies.

Benjamin M. Wilkowski played a lead role in conceptualization, funding

acquisition, methodology, and writing—original draft. Erika DiMariano played a supporting role in methodology and an equal role in supervision and writing—review and editing. Josiah Peck played a supporting role in methodology and an equal role in supervision and writing—review and editing.

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Wilkowski et al., 2020), we first define the broader construct of “goals” as “a current state of commitment to influence one’s relationship with an end-state.” Several aspects of this definition are worth elaborating upon. Goals are primarily defined by the “end-state” one wishes to occupy and not by the *means* one uses to attain it. Multiple possible means can be substituted to reach the same end-state (Gollwitzer & Moskowitz, 1996; Kruglanski et al., 2002). The word “influence” is used to broadly include goals to approach, promote, or maintain proximity to desirable states as well as goals to avoid, prevent, or maintain one’s distance from undesirable states (Ecker & Gilead, 2018; Elliot, 2006; Higgins, 1997). To influence one’s relationship with the end-state, one must enter into “a state of commitment,” which entails persistently engaging in goal-relevant activities to reach or maintain the desired state. Typically, this requires a person to commit effort and one’s limited resources (e.g., visual attention, working memory capacity, muscles, available calories, time, social resources, etc.) to engage in goal-relevant activities.

This definition makes it clear that the term, “goals,” is used here as a very broad umbrella term, encompassing many more specific constructs (e.g., intentions, personal strivings, personal values; see Austin & Vancouver, 1996). Researchers frequently distinguish between goal constructs based on their level of abstraction (e.g., Emmons, 1986). Within this view, lower level, concrete goals serve as the *means* by which higher level, abstract goals are achieved (Carver & Scheier, 2012; Powers, 2005; Vallacher & Wegner, 2011). At the most concrete level, one can have a goal to engage in a *concrete behavior*, which specifies a physical action one will perform at given time and place (e.g., to take a single step in the direction of my Psyc 1000 class at 12:50 p.m. today). At a slightly more abstract level, one can have a *low-level goal* (e.g., plan, Miller et al., 1960; intention, Ajzen, 1991; desire, Hofmann & van Dillen, 2012), which typically refers to a goal that can be accomplished through a continuous series of concrete behaviors (e.g., to attend my Psyc 1000 class today at 1 p.m.). At a still more abstract level, one can have a *mid-level goal* (e.g., personal project, Little, 2015; personal striving, Emmons, 1986; life task, Cantor et al., 1986), which typically refers to a goal that entails repeatedly completing multiple activities across a limited period of one’s life as part of one social role (e.g., to get an A in Dr. Clapp’s Psyc 1000 course this semester). At the most abstract level, one can have a *high-level goal* (e.g., personal value, De Raad et al., 2016; Schwartz, 2012; aspiration, Kasser & Ryan, 1996; explicit motive, Schultheiss & Kollner, 2021; vice, Wilkowski et al., 2022; principle, Powers, 2005) that extends across multiple contexts and social roles over a significant portion of one’s life (e.g., to be viewed as highly accomplished by others). These superordinate goals are highly abstract, such that they are never definitively attained. While it is most common to distinguish between these “levels” of abstractness, goals likely vary on a continuous basis in reality. Thus, some goals may occupy the fuzzy boundary between levels. For example, life goals (e.g., “to be a successful pediatrician someday”; King et al., 1998) appear to be more long-lasting than mid-level goals but more context-specific than high-level goals.

Clearly, no single taxonomy can fully describe every goal that any person has ever had. Low-level goals are arguably endless (e.g., at some point in history, someone has had the intention to stand on one hand while quacking like a duck). Mid-level goals are almost by definition specific to a culture and even a particular social role. As

such, past taxonomic research on mid-level goals has focused on specific contexts (e.g., the life tasks of American college students; Kaiser & Ozer, 1997; Reisz et al., 2013). By contrast, many theorists have argued that taxonomies of high-level goal content generalize across cultures and across the lifespan (see Kenrick et al., 2010; Schwartz, 2012). Furthermore, a taxonomy of high-level goals can provide an organizational framework for any subordinate goals that they guide as well, by specifying the underlying *reason* that goal is pursued. Given this, most past taxonomies focus on high-level goals. We followed that precedent here.

Although some attempts have been made to develop taxonomies of *unconscious* or *implicit* motivation (e.g., McClelland, 1987; Schultheiss & Kollner, 2021), the predominant focus is nonetheless on *conscious goals* assessed by *explicit self-report*. Although it would be fascinating to fully chart the landscape of implicit motives (e.g., as reflected in different aspects of the stories people tell about pictures; Schultheiss & Kollner, 2021), it is not immediately obvious how this could be done (e.g., how could one assess all possible coding schemes from stories told about all possible pictures?). Thus, we focus on conscious goals here.

Beyond the focus on conscious, superordinate goals, different models narrow their focus in different possible ways. Some models focus only on *moral values*, which refer to goals to promote behavior (in both the self and others) that is deemed *moral* or *good* and discourage behavior deemed *immoral* or *bad* (e.g., Graham et al., 2011; Janoff-Bulman & Carnes, 2016). Somewhat similarly, other models focus on *ideological values*, which refer to a person’s goals for how society *should* be structured (e.g., Duckitt & Sibley, 2009). Other models eschew politics and focus solely on *interpersonal values*, such as goals to “get along” or “get ahead” (e.g., Elliot, 2006; Locke, 2000). Beyond this, some models focus only on *generally desirable values* (e.g., Schwartz, 1992), while others also consider generally undesirable states which most people wish to *avoid* (e.g., Elliot, 2006). Finally, other models use a theoretical analysis to constrain their focus, such as by focusing on goals which fulfill (vs. fail to fulfill) theorized basic psychological needs (Kasser & Ryan, 1996; Ryan & Deci, 2017) or on *fundamental motives* theorized to have been directly shaped by biological evolution (Kenrick et al., 2010).

Despite the use of different terms (e.g., aspirations, explicit motives, personal values) and differences in focus (e.g., interpersonal vs. moral/sociopolitical goals), these models exhibit significant overlap (as reviewed next). For this reason, we sought to comprehensively include as many aspects of superordinate goal content from past models as possible. To briefly and unambiguously refer to conscious, superordinate goal content (rather than mid/low-level or unconscious/implicit goals), we adopted the term “personal values” or “values” (more simply). We selected this term, because it has been very clearly defined in past research, converges with the current definition, and has been previously used to describe constructs quite similar to those we focus on here (e.g., De Raad et al., 2016; Rokeach, 1973; Schwartz, 2012). Although we elaborate on some finer grained distinctions below (see Research Phase 1), we largely see little meaningful distinction between “personal values” and many other relevant superordinate goal constructs (e.g., explicit motives, aspirations, moral motives, etc.). Thus, we occasionally use phrases such as “values and superordinate goal content” to clarify that we see this analysis as pertinent to “aspirations,” “explicit motives,” and other superordinate goal constructs as well.

A Brief Review of Past Value Taxonomies

To achieve these aims, we next sought to identify currently influential models and measures of values for inclusion. To keep this endeavor both feasible and maximally impactful, we constrained our focus to widely cited and influential models. To establish these models' influence, we note the number of times a seminal publication pertaining to each has been cited (in Google Scholar, as of the date of this writing).

This yielded three main types of models: First, several models aimed to measure the structure of values quite broadly, namely, Schwartz's theory of universal values (e.g., Schwartz, 1992, cited 26,550 times); goal contents theory (a subtheory of self-determination theory; e.g., Kasser & Ryan, 1996, cited 4,799 times); the evolutionarily inspired fundamental motives framework (e.g., Kenrick et al., 2010, cited 2,142 times); and adaptations of the Big Five trait taxonomy to the motivational domain (e.g., goals to be extraverted or conscientious; given the influence, this trait taxonomy has had—e.g., John & Srivastava, 1999, cited 16,949 times). Second, other models focus only on interpersonal values, such as the interpersonal circumplex (e.g., Bakan, 1966, cited 6,275 times), and the hierarchical model of approach and avoidance motivation (e.g., Elliot & McGregor, 2001, cited 6,841 times). Finally, other models focused on moral/sociopolitical values, such as moral foundations theory (e.g., Graham et al., 2009, cited 6,224 times), the dual process motivational model of ideology (e.g., B. Altemeyer, 1981, cited 4,547 times; Duckitt, 2001, cited 2,180 times; Pratto et al., 1994, cited 7,563 times), the dual strategies theory of rank attainment (e.g., Henrich & Gil-White, 2001, cited 3,517 times), and research on motivations to respond without prejudice (e.g., Plant & Devine, 1998, cited 2,525 times). Beyond this, we also included collections of value-descriptive phrases that were initially gathered in a bottom-up fashion, as we elaborate upon more fully below. While this list is not fully exhaustive, it represents a wide variety of constructs from many currently influential models.

Although these taxonomies differ in focus, several reoccurring themes are nonetheless apparent in even an informal analysis. Table 1 attempts to highlight these themes. However, our hope is that this table simultaneously highlights the difficulties in definitively mapping constructs from past models onto one another, indicating the need for a more systematic analysis.

One long-standing distinction harkening back to the days of behaviorism is between values focused on *approaching pleasure* versus *avoiding pain*. This distinction is represented broadly in many models (e.g., hedonism vs. security/safety) and in more specific domains (e.g., to approach success vs. avoid failure; to approach intimacy vs. avoid conflict). Beyond this, models of interpersonal values most commonly distinguish between the values of “getting along” (i.e., communion) versus values of “getting ahead” (i.e., agency). Finally, models of moral/sociopolitical values (e.g., Duckitt & Sibley, 2009; Graham et al., 2017) focus predominantly on the *preservation of convention* (e.g., in-group loyalty, right-wing authoritarianism) versus *social change and egalitarianism* (e.g., fairness, equality).

Despite these reoccurring themes, Table 1 simultaneously makes several issues apparent. First, some models include constructs which others omit (e.g., neither Novacek & Lazarus, 1990, nor Neel et al., 2016, include values related to upholding traditions). Second, multiple variants of each theme have been proposed, and different models parse them differently. Regarding agency, distinctions have

been made between values focused on obtaining power (i.e., control over others), achievement (i.e., mastery of valuable skills), prestige (i.e., admiration and voluntary deference from others), dominance (use of force to coerce others), and avoidant values (e.g., to avoid failure or submission). Regarding communion, distinctions have been made between values focused on affiliation (i.e., friendship and social support), intimacy (i.e., romance and mating), avoidant values (i.e., to avoid conflict or rejection), and values to help different groups of people—including kin, close others, or *all* people. Beyond this, models posit different forms of convention-preservation (e.g., conformity, tradition, in-group loyalty, respect for authority, religiosity, etc.), openness to change (i.e., focused on changing oneself vs. society), pleasure enhancement (i.e., hedonism, stimulation, mate acquisition/sex), and pain avoidance (i.e., personal security, societal security, disease avoidance, health, etc.). It is not clear from the extant literature which distinctions are most robust. It is possible that some of these (seemingly) finer distinctions are actually more robust than the (seemingly) broader themes highlighted above (e.g., McClelland, 1987, argued that achievement and power should be fully separated).

Third, “jingle-jangle” problems are also apparent (John et al., 2008). “Jingle” problems occur, when researchers use the same term to refer to different constructs. For example, the term “achievement” is sometimes used to refer to the independent mastery of autonomously chosen tasks (e.g., McClelland, 1987), and other times used to refer to social recognition for possessing socially valued skills (e.g., Schwartz, 2012). “Jangle” problems occur, when different terms are used to describe overlapping or even identical constructs (e.g., respect for authority vs. right-wing authoritarianism; extrinsic aspirations vs. prestige values).

Because of this, there are many blurry boundaries. Many legitimate questions could be raised about the placement of constructs in Table 1. For example, social dominance orientation or right-wing authoritarianism could reflect power, conventionality, or a combination of these. Given these issues, a more formal analysis would be useful.

The Lexical Approach: The Advantages and Disadvantages of Examining Single Words

The current literature on superordinate goal content thus resembles the state of personality trait research in roughly the 1970s and 1980s, when the above-noted issues were commonplace (see Goldberg, 1993; John et al., 2008, for historical reviews). The first step toward rectifying this situation came from researchers adopting the *lexical approach*. This involves extensively examining the structure of trait-descriptive adjectives, and such work is largely responsible for the now widely accepted “Big Five” trait taxonomy. Importantly, the lexical approach has also been applied to examining the structure of values and superordinate goals, and it yields constructs quite similar to those highlighted in Table 1 (e.g., De Raad et al., 2016; Wilkowski et al., 2020; see Wilkowski, Williamson, et al., 2025, for a review).

Importantly, both trait and value researchers have come to realize the shortcomings of single-word items (Goldberg, 1999; Schwartz et al., 2001). Single words are often very abstract and ambiguous, resulting in a less reliable measure (Goldberg, 1999; Goldberg & Kilowski, 1985; Schwartz et al., 2001). They are also difficult to translate and fail to capture nuance (Goldberg, 1999; Hofstee et al., 1992). It could even be argued that single words fail to fully describe many important values.

Table 1
An Attempt to Organize Past Models of Goal Content

Pain and pleasure			Getting ahead		Getting along			Change versus consistency				
Model	Avoiding pain	Approaching pleasure	Power	Achievement	Failure avoidance	Affiliation	Intimacy	Avoidant social	All people	Social change	Personal change	Consistency
(Schwartz's (2012) value theory Goal contents theory (e.g., Grouzet et al., 2005; Ryan & Deci, 2017)	Security	Hedonism, stimulation	Power	Achievement		Benevolence			Universalism		Self-direction	Conformity, tradition
	Physical health, safety	Hedonism	Popularity, image	Financial success		Meaningful relationships			Community contribution		Personal growth/self-acceptance	Conformity, spirituality
	Self-protection, disease avoidance	Mate acquisition	Status			Affiliation, group affiliation	Mate retention; kin care	Exclusion concern; breakup concern; independence				
			Agency		Submission	Communion		Separation				
Interpersonal circumplex (e.g., Locke, 2015)												
Approach and avoidance (Elliot, 2006)			Performance-approach	Mastery	Performance avoidance	Social approach		Social avoidance				
Moral foundations theory (e.g., Atari et al., 2023; Graham et al., 2017)									Care, fairness, proportionality	Equality		Loyalty, authority, purity
Dual process theory of ideology and prejudice (e.g., Duckitt, 2001)			Social dominance orientation (dominance, anti-egalitarianism)							Low social dominance orientation (egalitarianism, anti-dominance)		Right-wing authoritarianism (conventionalism, submission, aggression)
Motivation to respond without prejudice (e.g., Plant & Devine, 1998)												
Dual strategies theory (Cheng et al., 2010; Henrich & Gil-White, 2001)			Dominance	Prestige					Internal motivation to respond without prejudice			
Novacek and Lazarus (1990)	Stress avoidance	Sensation-seeking	Power/achievement			Affiliation			Altruism		Personal growth	
Talevich et al. (2017; 14-cluster solution)	Self-protection, health, (security and belonging)	Openness to experience	Power	Ambition and ability, intellectual competence, financial and occupational success		Family, (security and belonging)	Avoid hassles		Morals and values, virtues		Self-fulfillment, (openness to experience)	Religion and spirituality

For example, kin care values (Neel et al., 2016) and meaningful relationships values (Kasser & Ryan, 1996) do not refer to “helping” all people. Instead, they refer to helping specific types of people, such as kin and close others (respectively). This cannot be accurately described without a fuller phrase.

The Comprehensive Examination of Phrases

In the current investigation, we therefore sought to comprehensively examine the structure of value-descriptive phrases. Studies of trait-descriptive phrases were also instrumental to the development of the Big Five trait taxonomy (Goldberg, 1993; John et al., 2008). For example, Costa and McCrae (1976; McCrae & Costa, 1985, 1987) examined the empirical structure of many personality scales in wide use at the time. They found that the Big Five could be identified, when scales were sufficiently broad in scope. Goldberg (1999; Goldberg et al., 2006) gathered a large collection of trait-descriptive phrases in bottom-up manner. The resulting item pool—the International Personality Item Pool—has been highly influential (e.g., in charting more specific aspects of traits; DeYoung et al., 2007; Soto & John, 2017).

In the current investigation, we combined aspects of both Costa/McCrae and Goldberg’s approaches. Similar to Costa and McCrae (1976), we examined the structure of items from existing, influential measures. To ensure that our item pool was sufficiently broad to capture the major dimensions of values, however, we focused on understanding the structure of a *combined* pool of items from multiple preexisting measures.

However, focusing solely on previous, influential measures might tell us more about *what previous theorists are interested in* and possibly overlook important values omitted from them. There is clear precedent for this, as Costa and McCrae’s (1976) initial investigations of the structure of some trait measures yielded only three of the “big five” traits. Because of this, we also incorporated item collections that were generated in a “bottom-up” manner. Typically, researchers assemble such lists by interviewing participants, inspecting common themes in participants’ idiographically identified goals, and conducting extensive reviews of the psychological literature. In chronological order, some prominent examples include Murray (1938), Rokeach (1973), Wicker et al. (1984), Ford and Nichols (1987), Novacek and Lazarus (1990), Schwartz (1992), Chulef et al. (2001), and Talevich et al. (2017), among others.

The item pool created by Talevich et al. (2017) arguably represents the beginning of a motivational equivalent to Goldberg et al.’s (2006) International Personality Item Pool, as it collects items from many prior investigations and adds unique items to them. Talevich et al. obtained ratings of item similarity from one large, diverse sample, and used cluster analysis to chart the hierarchical structure of these items. They presented solutions at multiple levels of specificity, including the 3, 9, 14, 24, and 44 cluster solutions. Their three-cluster solution contained two of the reoccurring themes highlighted above, agency and communion. The final broad cluster, meaning, appears to combine aspects of several reoccurring themes noted above, such as change, consistency, helping all people, and pleasure/happiness-related values. Their more specific solutions contain many of the finer grained distinctions noted above (see Table 1 for the 14-cluster solution).

This analysis is both impressive and informative. Nonetheless, further examination would be useful for several reasons. First, it

would be useful to examine which constructs from which of their solutions can be replicated. Second, it would also be useful to examine the structure of such commitment ratings directly (beyond similarity ratings). Finally, it would be useful to examine the structure of value content in other analyses used to construct reliable questionnaires (e.g., principal component analysis [PCA] or exploratory factor analysis [EFA]).

The Utility of Focusing on the “WEIRD” American Context

In the current investigation, we focused on the American cultural context (i.e., our home culture). We view this as an important, but nonetheless preliminary step toward characterizing human values more broadly. Because the United States and other Western, educated, industrialized, rich, and democratic (WEIRD) cultures are highly nonrepresentative of humanity (Henrich et al., 2010), the results of this investigation cannot be assumed to generalize to all cultures. Nonetheless, all models reviewed above were proposed by researchers from WEIRD cultures (e.g., the United States, Canada, New Zealand, Israel), and many make explicit reference to nonuniversal cultural practices (e.g., monogamous marriage, capitalism, Christianity, etc.). Given they fail to converge even within their original cultural context, it is important to integrate their structure there first. Once this is done, it will be easier to theorize about which dimensions of value content may (or may not) generalize to other cultures.

The Current Investigation

In summary, the current investigation aimed to understand the integrated structure of value-descriptive phrases from past influential measures and item collections. Our aim was not to develop a new scale but rather to examine the combined structure of existing scales. To do so, we gathered value-descriptive items from past instruments, standardized them to a common format, eliminated redundancies, and asked two large samples of American adults to rate their commitment to each value. We specifically recruited a convenience sample of undergraduates and a more representative, census-matched sample. We expected items to exhibit a hierarchical structure, such that they could be usefully described at different levels (Clark & Watson, 2019; DeYoung et al., 2007; Talevich et al., 2017). To examine this structure, we mainly utilized used Goldberg’s (2006) “bass-ackwards” technique, which involves examining principal component solutions of increasing levels of complexity. Following recent elaborations of this procedure, we also examined how well this converged with the results of other analyses, including cluster analysis (e.g., Forbes et al., 2025). We sought to locate solutions which provided a useful “general” and “specific” description. At each level, we aimed to find constructs that were replicable across samples, replicable across analytic techniques, internally reliable, and which helped to usefully organize constructs from previous models.

Research Phase 1: Gathering the Item Pool Identifying Measures for Inclusion

We first sought to identify items for inclusion. To be eligible, an explicit, nomothetic item set needed to have been developed in English to measure a participants’ commitment to conscious, super-ordinate goals or values using short phrases. We considered it to be

well beyond the scope of any one investigation to conduct a full, systematic search of the literature and incorporate all items that met this description into a single item pool. A brief attempt to conduct such a search yielded an unwieldy number of eligible questionnaires, many of which were highly redundant, poorly validated, ad hoc measures used only once.

To ensure broad coverage content that was unbiased by the focus of past theories, we also included several collections of value-descriptive phrases that were assembled in a “bottom-up” fashion. As noted above, these items sets were assembled by interviewing participants about their goals and values, identifying common themes in idiographically identified goals, and closely reviewing the published literature. Several such efforts have been made since Murray’s (1938) seminal work, with later efforts incorporating values and goals identified in prior efforts. We specifically included Novacek and Lazarus’s (1990) and Talevich et al.’s (2017) item sets, as these two sources subsumed the item content in many prior “bottom-up” investigations (e.g., Chulef et al., 2001; Wicker et al., 1984). The inclusion of Talevich et al.’s item set was particularly invaluable, as it contained roughly 40% of items used in the current investigation.

Nonetheless, Costa and McCrae’s (1976; McCrae & Costa, 1985, 1987) seminal work clearly illustrates that an important step toward developing a consensual taxonomy is to incorporate existing, highly influential constructs within it. Thus, we next sought to incorporate highly influential and well-validated measures into our item pool. Based on these criteria, we identified the models listed in Table 1 for inclusion (which were all highly cited, as documented above). We next carefully reviewed the literature to select the most comprehensive and refined (i.e., reliable, valid, etc.) measure of each construct. Selecting a narrow or unreliable measure could lead our analyses to miss a critical aspect of value content. We searched scientific databases (e.g., APA PsycInfo, Google Scholar) for the most recent publications on these models and/or authored by the original theorists to help locate the most comprehensive and refined measure for inclusion. This often led to the inclusion of more recently developed measures, rather than earlier, more widely cited measures (e.g., Schwartz & Cieciuch’s, 2022, Portrait Values Questionnaire–Recently Revised rather than Schwartz et al.’s, 2001, Portrait Values Questionnaire or Schwarz’s, 1992, Schwartz Values Scale; Elliot & Murayama’s, 2008, Achievement Goal Questionnaire–Revised rather than Elliot & McGregor’s, 2001, Achievement Goal Questionnaire).

Finally, we next sought to identify more recent extensions or elaborations of these influential constructs, which may not be highly cited yet simply because of a recent publication date. Several instruments incorporated into our initial item pool met this description. For example, discussions in recent publications surrounding right-wing authoritarianism led us to include a recently developed, well-validated measure of left-wing authoritarianism (Costello et al., 2022). We also became aware of a revised Moral Foundation Questionnaire (that was at the time only available as a PsyRXiv preprint; now, Atari et al., 2023) after already including items from the original scale (Graham et al., 2011). The revised scale usefully incorporated constructs from other theories of morality (e.g., equality and proportionality based on Rai & Fiske, 2011). We also included the measure of moral motives (Janoff-Bulman & Carnes, 2016), which uniquely included moral motives for industriousness and restraint. Included scales are marked with an asterisk in the reference section. Once

identified, we copied the original items into a single list, which contained 742 items.

Standardizing Items to a Common Format

Once assembled, we next standardized items to a common format. Most items directly asked how important or committed one was to a value (in line with the target construct). However, some items measured related but nonetheless distinct constructs. For example, some items measured *beliefs*, which can be defined as cognitive representations of the *current state of the world* rather than the *desired state* (e.g., “The established authorities generally turn out to be right about things, while the radicals and protestors are usually just ‘loud mouths’ showing off their ignorance”; R. A. Altemeyer, 2006, p. 17). More subtly, some items asked about *motivational orientations*, which some researchers distinguish from *commitments* (e.g., Elliot & Fryer, 2008; Rawolle et al., 2013). While commitments refer to a desire to influence one’s relationship with a superordinate end-state, motivational orientations instead refer to the tendency to experience specific states (e.g., task success or failure) as pleasurable or aversive (e.g., “I worry about being rejected”; Neel et al., 2016; see also Graham et al., 2017 for a similar construct in the moral domain). While motivational orientations are certainly related to value commitments under most circumstances, it has nonetheless been argued that “liking” (i.e., motivational orientations) is distinct from “wanting” (i.e., commitments; e.g., Berridge & Robinson, 2016).

Whenever possible, we rewrote items describing a cognitive belief or a motivational orientation to describe a value-commitment instead. For example, the item “I worry about being rejected” was initially rewritten to “to avoid being rejected by others,” while the item, “The established authorities generally turn out to be right about things, while the radicals and protestors are usually just ‘loud mouths’ showing off their ignorance” was rewritten to “to ensure that people trust the established authorities.” In some cases, it was impossible to rewrite an item in a way that accurately reflected the original item. Such items were discarded due to being outside the scope of the investigation. For example, the item, “If a few of the worst Republican politicians were assassinated, it would not be the end of the world” (Costello et al., 2022) was discarded, because it did not refer to a state one seeks to intentionally bring about.

Beyond this, the format of instruments sometimes varied more subtly, and we did not want these variations to contaminate the obtained structure. For example, the Portrait Values Questionnaire–Recently Revised (Schwartz & Cieciuch, 2022) asks participants to rate their similarity to a described, gender-matched person (e.g., “It is important to her that people recognize what she achieves”). Most other instruments ask participants to straightforwardly indicate how important or committed they are to a described value. Beyond this, some instruments use full sentences, while others use briefer phrases. Most are written in the first person/singular, but some are written abstractly, in the first person/plural, or in the third person.

To identify a target format, we turned to research on the linguistic structure of goal and value descriptions. We found it in an admittedly unlikely place. Buried deep in Carlton University’s library lies an unusually insightful but nevertheless unpublished dissertation by Chambers (2000; cf. Chambers, 2007), supervised by Brian Little. After examining thousands of idiographic goal descriptions, Chambers concluded that goals can be most parsimoniously communicated as a *verbal phrase*, taking the form “verb + complement.” The

“complement” serves to unambiguously describe the desired end-state. We found this insightful, as it converged with the briefest format of many scales (e.g., “to help people in need,” Kasser & Ryan, 1996; “that I appear forceful,” Locke, 2000).

To ensure that items unambiguously described a superordinate goal or value, we standardized all items to include verbs that communicated a long-lasting state of being (i.e., durative, stative verbs, such as “to be”) or actions that one aims to perform frequently (i.e., durative, atelic verbs such as “to help”). Beyond this, we standardized phrases to the first-person singular (a straightforward, common format). We somewhat arbitrarily chose to standardize to infinitive tense (e.g., “to help those in need,” which is used in Kasser & Ryan, 1996, among other sources). Beyond this, we also structured the *complement* portion of each item to unambiguously describe an abstract end-state that could be present in the life circumstances of many or all American adults (e.g., similar to the item, “to feel that there are people who really love me, and whom I love,” from Kasser & Ryan, 1996). Beyond these criteria, we sought to preserve the original item as much as possible.

To achieve these objectives, we first asked two undergraduate research assistants to independently rewrite each item in the target format. They then met to discuss discrepancies and wrote a final item that best achieved the objectives. The first author read all resulting items to ensure that they achieved the intended objectives and revised them as necessary.

During this process, we split source items into two, when it appeared to separately describe two separate values (e.g., “It is important to him to follow his family’s customs or the customs of a religion” from Schwartz & Cieciuch, 2022, became “to follow my family’s customs” and “to follow the customs of my religion”). We also eliminated some glaringly obvious redundancies at this stage (e.g., when two items from the same scale would be rewritten into an identical phrase). Through this process, our initial list of 742 was trimmed to 699 items.

Removing Highly Synonymous Items

As anticipated, the resulting list included many highly synonymous items. Psychometricians long ago noted that some constructs are very narrow and can only be reliably measured through similar (or redundant) items (Clark & Watson, 1995, 2019). This was clearly present in our items, as some constructs were quite specific (e.g., kin care [children]; mastery avoidance, etc.). Given that different models describe overlapping constructs (see Table 1), we also anticipated redundancy *across* instruments. As we gathered items, we were surprised by the pervasiveness of this (e.g., items from five instruments focused on avoiding conflict).

Including “pockets” of highly similar items could obscure our ability to detect broader dimensions (Clark & Watson, 1995, 2019), and we therefore sought to combine any two (or more) items which described essentially the same value. Doing so often led to an item that more clearly specified the desired future state in a general manner (as intended). This process trimmed our previous list of 699 items to 361 items, which were administered our first sample. Thus, there were many synonymous items in the initial pool (i.e., 48% of items were combined). We found the patterns of synonymy *across* instruments to be highly interesting, as they began to indicate which constructs overlapped. To illustrate these patterns, Table 2 lists

scales which had at least one item that was synonymous with items from 12 of Talevich et al.’s (2017) clusters (in their 14-cluster solution). (Talevich et al.’s, 2017 clusters were selected as a focus, because their items were derived from prior sources and thus yielded high levels of synonymy. Their health and intellectual competence clusters had no synonymous items.) Clearly, item synonymy was not randomly distributed across the 108 source scales.

Research Phase 2: Charting the Structure of Value-Descriptive Phrases

We next asked two large samples to rate their commitment to each value. We first administered our items to a convenience sample of undergraduates to ensure there were no major issues. We next administered them to a larger sample of American adults recruited online using the Prolific platform (Peer et al., 2017). Importantly, these participants were matched to the demographics of the United States in terms of race, gender, and age. Because many values are reliably associated with political orientation (see, e.g., Janoff-Bulman & Carnes, 2016; Kivikangas et al., 2021; Piurko et al., 2011; Wilson & Sibley, 2013), we also matched this sample to the political ideology of United States. We expected these items to exhibit a hierarchical structure, such that they could be usefully described in both abstract and specific terms (Clark & Watson, 2019; DeYoung et al., 2007). To examine this, we first employed Goldberg’s (2006) “bass-ackwards” technique. Importantly, however, we examined how robust our findings were across analyses, including very distinct procedures such as cluster analysis. Because these studies used similar methods and our analyses of them were intertwined, we present them together.

Method

Transparency and Openness

We report all measures, exclusions, and how our sample size was determined. There were no experimental manipulations. Our verbatim materials, data, and analytic code are available at <https://osf.io/4utjg/>. Additional online tables and Results section (which are lengthy and likely only of interest to specialists) are also available on the OSF at <https://osf.io/4utjg/> (Wilkowski, DiMariano, & Peck, 2025). Given that this investigation was not hypothesis-driven and our desire to replicate any findings, we did not believe that pre-registration was necessary. Instead, we aimed to focus on findings that were robust across samples and variations in analytic techniques.

Ethical Compliance

Both studies were approved by the University of Wyoming’s Human Subjects Institutional Review Board (Protocols No. 20210902ED03117 and No. 20220609JP03328).

Sample A: Sample Size Determination, Exclusions, and Participants

Sample Size Determination

We aimed to recruit a sample of at least 300 participants for Sample A (after exclusions), as this is considered a general

Table 2

Scales Containing Items Synonymous With Talevich et al.'s (2017) Clusters

Talevich Power	Neel Kin Care (family)
Cassidy Competitiveness	Novacek Affiliation
Cassidy Dominance	Talevich Security and Belonging
Cassidy Prestige	Cassidy Mastery
Cheng Dominance	Cassidy Work Ethic
Elliot Performance Approach	Kasser Image
Locke Low Communion	Kasser Meaningful Relationships
Locke Low Comm./High Ag.	Locke High Communion
Neel Status	Locke High Comm./High Ag.
Novacek Power/Achievement	McCabe Extraversion
Talevich Financial Success	Neel Group Affiliation
Cassidy Acquisitiveness	Neel Mate Retention
Cheng Prestige	Neel Mate-Seeking
Kasser Wealth	Neel Self-Protection
Neel Kin Care (children)	Novacek Affiliation
Novacek Power/Achievement	Novacek Personal Growth
Novacek Stress Avoidance	Novacek Power/Achievement
Schwartz Achievement	Novacek Sensation Seeking
Schwartz Power	Novacek Stress Avoidance
Talevich Ambition and Ability	Schwartz Security
Elliot Mastery Approach	Talevich Morals/Values
Janoff-Industriousness	Graham Fairness
Janoff Self-Restraint	Graham In-Group Loyalty
Locke High Agency	Janoff Fairness
McCabe Conscientiousness	Kasser Community Contribution
Novacek Personal Growth	Novacek Altruism
Novacek Stress Avoidance	Novacek Personal Growth
Schwartz Self-Direction	Schwartz Humility
Talevich Avoid Hassle	Schwartz Universalism
Cassidy Work Ethic (Rev.)	Talevich Virtues
McCabe Conscientiousness	Atari Care
Talevich Self-Protection	Cheng Prestige
Elliot Social Avoidance	Graham Care
Locke Low Communion/Low Agency	Janoff Fairness
Locke Low Agency	Kasser-Community Contribution
Locke High Communion/Low Agency	Locke High Comm./High Ag.
McCabe Extraversion (Rev.)	Locke High Comm./Low Ag.
Neel Exclusion Concern	Neel Status
Neel Self-Protection	Novacek Altruism
Novacek Stress Avoidance	Schwartz Benevolence
Schwartz Security	Talevich Openness
Talevich Religion/Spirituality	McCabe Extraversion
Atari Purity	Novacek Sensation-Seeking
Graham Purity	Schwartz Hedonism
Novacek Altruism	Schwartz Stimulation
Schwartz Tradition	Talevich Self-Fulfillment
Talevich Family	Kasser Personal Growth
Atari Authority	Novacek Personal Growth
Graham Authority	

Note. Scales are listed by the first author of the source article (starred in reference section). Rev. = reverse-scored items; Comm. = communion; Ag. = agency.

prerequisite for structural analyses (see Clark & Watson, 2019). Although this decision was based on Clark and Watson's (2019) recommendations, it is nonetheless useful to consider the statistical power this provides.

Power analysis for principal component analyses (or EFAs; our focal analyses) is complex. A researcher's ability to reproduce the population's structure with a smaller sample (i.e., statistical power)

is influenced by multiple considerations (Browne, 2015). Past statistical simulations (MacCallum et al., 1999; Mundfrom et al., 2005) show that solutions containing fewer components, more items per component (i.e., overdetermination), and greater variance explained by the components (i.e., communality) require fewer participants to reproduce. Thus, simple "rules of thumb" (e.g., five or 10 participants per item) are misguided.

Fortunately, Mundfrom et al. (2005) uncovered a useful pattern in their simulations. When the number of items per component exceeded six, the required sample size began to stabilize regardless of communality or number of components. For example, a sample of 130 was sufficient to reproduce a six-component structure, with eight items per component (i.e., 48 items total), and low communality. Because the components of interest in the current investigation could be expected to contain six or more items, this provides useful guidance.

Nonetheless, it is unclear whether this conclusion applies to the present study, which administered more items and could potentially yield more than six components (e.g., Talevich et al., 2017, found 44 clusters). We therefore conducted additional simulations, using the Monte Carlo power analysis procedures developed by Muthén and Muthén (2002; cf. Browne, 2015, p. 387). Using this technique, we first reproduced the above example from Mundfrom et al. (2005; i.e., six components, eight items per component, low communality) to establish that our target sample size (300 participants) provided sufficient power using a different power analytic technique. We then conducted additional simulations involving 25, 35, and 45 components, with all other parameters held constant (i.e., sample size, items per component, communality). The largest simulation thus contained roughly the same number of items as the present study (i.e., 360) and slightly more constructs than found in Talevich et al.'s (2017) largest solution (i.e., 45, which exceeds the 44 constructs they found). We conservatively focused on low communality solutions, because past simulations (MacCallum et al., 1999; Mundfrom et al., 2005) indicate they require more participants to accurately estimate. These simulations were conducted using MPlus (Version 7.4) and are available on our OSF website at <https://osf.io/4utjg/>. In each simulation, 5,000 samples of 300 participants each were taken from a simulated population where the relevant model was specified, and the component model was then applied to each simulated sample. Consistent with Muthén and Muthén's recommendations, all parameters were evaluated according to two criteria: (a) The bias in estimating each parameter and its standard error should be less than 10%, (b) coverage should be between 91 and 98%. Parameters of substantive interest (i.e., an item's primary loading, in this case) were evaluated according to two additional criteria: (c) Bias in estimating the standard error should be less 5%, and (d) these parameters should be significant in 80% of simulated samples or more. In all simulations—including the 360-item, 45-component solution—these parameters were met. Thus, the target sample size of 300 (suggested by Clark & Watson, 2019) did indeed provide sufficient power to achieve the current aims.

Participant Recruitment and Exclusions

To reach our goal of 300 participants, we recruited participants for two semesters. Three hundred sixty-two undergraduate psychology students from the University of Wyoming completed it in exchange

for course credit. We excluded participants from analyses if they failed to answer 10% or more of the target questions (three participants), failed three or more of the eight attention check questions (see below for further description; 39 participants), failed a continuous reCAPTCHA check screening for the use of automated software (also see below; eight participants), or provided a nonsensical response to an open-ended question (0 participants).

This resulted in a final sample of 312 participants. Their demographic characteristics are summarized in Table 3. As would be expected of an undergraduate sample in this region, this sample is younger, Whiter, and more conservative than the United States as a whole.

Sample B: Sample Size Determination, Exclusions, and Participants

Sample Size Determination

To overcome the limitations of convenience sampling, we next recruited a sample of participants online who were matched to the 2020 American Census in terms of race/ethnicity, age, gender, and political ideology. To ensure that this could be done reliably, we also increased our target sample size to 500.

Participant Recruitment and Exclusions

To obtain this target sample, we initially recruited 539 participants from the online platform, Prolific (Peer et al., 2017). Prolific users' responses to demographic questions on a prescreening questionnaire were used to recruit participants in proportion to national percentages. Participants were excluded from analyses and not paid, if they failed to answer 10% or more of the target questions (seven participants), failed three or more of the eight attention check questions (10 participants), failed a continuous reCAPTCHA check screening for the use of automated software (0 participants), or provided a nonsensical response to an open-ended question (five participants). All other participants were paid \$4.84 (for a roughly 30-min study). After exclusions, the remaining 517 participants over-represented certain demographic groups (e.g., White/European Americans, Democrats, Independents). To ensure the final analyzed sample was representative, we excluded from analyses the last 10 participants to complete the study from these overrepresented groups, as well as one participant who revoked their consent for Prolific to disclose their demographic data.

This resulted in a final sample of 506 participants. Their demographic characteristics are displayed in Table 3. This indicates that these participants are more diverse and representative of the American population than Sample A.

Measures and Procedure

Data collection for both studies took place online using Qualtrics software. Sample A participants accessed it through our department's online Sona system, while Sample B participants accessed it through Prolific. After providing informed consent, Sample A participants responded to the 361 items developed in Research Phase 1 in a random order (illustrative items and additional online Table 1 at <https://osf.io/4utjg/> for a complete list). Initial analyses of Sample A indicated that two items (derived from the Social Dominance Orientation Scale—Ho et al., 2015; and

Table 3
Demographic Information for Samples A and B

Demographic category	Sample A %	Sample B %
Gender		
Woman	75.3	50.6
Man	23.4	47.6
Race/ethnicity		
White/European American	92.6	71.9
Black/African American	1.6	14.0
Hispanic/Latino	10.3	10.9
Asian	2.2	8.7
Native American	1.6	2.0
Native Hawaiian	1.3	0.01
Other	1.0	1.8
Age		
18–24	94.2	12.1
25–34	2.9	18.0
35–44	1.9	17.6
45–54	0.6	14.8
55+	0.0	37.5
Political ideology		
Liberal	27.9	44.3
Neutral/independent	28.2	22.3
Conservative	43.9	33.4
M_{age} (SD)	20.3 (4.34)	45.6 (15.9)
M_{ideology} (SD)	4.25 (1.43)	3.72 (1.58)

Note. Participants could endorse more than one racial/ethnic identity. The categorical political ideology item was used by Prolific for participant recruitment. We also administered a continuous Political ideology item, which varied from a 1 (*very liberal*) to 7 (*very conservative*) response scale and is presented at the bottom of this table.

the Right-Wing Authoritarianism Scale—R. A. Altemeyer, 2006) had very low rates of endorsement, were highly correlated with one another, and formed a nuisance factor. Thus, we removed them from the focal analyses of Sample A and only administered the remaining 359 items to Sample B. In both studies, participants indicated how committed they were to the described value using a 0 (*not at all committed*) to 4 (*extremely committed*) response scale. We used this Unipolar Response Scale, because it most closely corresponded to the definition of the target construct and represents the most Common Response Scale used in previous instruments.

Because online data collection can sometimes yield low-quality data (Buhrmester et al., 2018; Litman & Robinson, 2020; Rivera et al., 2022), we took several precautions to avoid this with both samples. First, participants responded to eight directed response attention check items (e.g., “to answer this question with the response that I am very committed”). Following Prolific's policies, we excluded participants who failed to provide the directed response to three or more of these attention check questions. Second, participants responded to an open-ended question about what their “guiding principles” in life were. Participants who provided a nonsensical answer were also excluded (e.g., One excluded participant responded: “Most questions will use a frequency scale, asking you to reflect on how often you engage in certain behaviors at work.”). Finally, our Qualtrics questionnaire recorded Google's invisible reCAPTCHA (Version 3), which continually analyzes mouse movements for signs that they were made by a human versus automated software (i.e., bots, artificial intelligence). Participants were excluded, if their reCAPTCHA score indicated responses were likely provided by automated software (i.e., <.50).

Analytic Plan

Bass-Ackwards Analysis

We first used Goldberg's (2006) "bass-ackwards" technique to explore the hierarchical structure of values in both samples. These analyses were performed in R, using the psych package (Revelle, 2025). To do so, we began by extracting the one-component solution within a PCA. We then proceeded to iteratively extract solutions containing one additional component. An Oblimin rotation was applied to each (following Fabrigar et al., 1999), as oblique rotations allow intercomponent correlations to be determined by the data (rather than forcing them to be uncorrelated). Past research indicates that values and superordinate goals tend to exhibit modest positive intercorrelations (e.g., Bradshaw et al., 2023; Schwartz, 1992), so this consideration was quite relevant. Correlations between component scores were used to track the emergence of new components in adjacent solutions. PCA was used in these focal analyses (rather than EFA, per Goldberg's, 2006, recommendations). This allowed us to calculate intercomponent correlations directly, as participants' component scores are directly calculated as part of PCA.

It is typically recommended that researchers consult Parallel Analysis or Velicer's minimum average partial (MAP) analysis to determine the optimal number of components to extract (e.g., Fabrigar et al., 1999; Goldberg & Velicer, 2006). For the present studies, we consulted such indices but considered them to provide a reasonable upper limit. Goldberg (2006) also suggested that solutions should be discarded once new components become uninterpretable.

Like Goldberg (2006), however, we considered replicability to be the primary criterion for selecting a solution. In the current investigation, we considered Sample B to provide higher quality data because of its greater representativeness and size. We thus began by examining solutions from this data set. We next examined if solutions from it could be replicated within Sample A once rotated to maximum similarity with Sample B via a Procrustes rotation (McCrae et al., 1996). Procrustes rotations help to eliminate arbitrary differences in rotation that can sometimes emerge in purely data-driven analyses. We then calculated Tucker's (1951) congruence coefficients to determine how similar components were across samples. Following Lorenzo-Seva and ten Berge (2006), we considered congruence coefficients of .85 or greater as providing evidence of "fair similarity," and congruence coefficients of .95 or greater as providing evidence of equivalence.

Beyond this, we aimed to uncover solutions at both a general and specific level. A general solution would summarize constructs from previous models in a small number of broad domains. However, these broad domains would likely overlook important, finer grained distinctions. Researchers have used a variety of techniques to locate more specific "facets" or "aspects" of the Big Five domains (DeYoung et al., 2007; Hofstee et al., 1992; Soto & John, 2017). If such a specific solution was not readily apparent from the bass-ackwards analyses, we planned to explore such analyses to find replicable "facets."

Robustness Analyses

Beyond examining replicability across samples, we also examined how replicability findings were across analytic strategies. To do so, we conducted additional robustness analyses which varied the extraction method (i.e., EFA rather than PCA), rotation (i.e., Varimax,

rather than Oblimin), and participant exclusion criteria (i.e., no participants excluded, rather than the exclusions described above).

Similar to other recent extensions of the bass-ackwards technique (e.g., Forbes et al., 2025), we also considered whether findings generalized to an analysis that was computationally quite different, cluster analysis. These analyses were conducted using Ward's hierarchical agglomerative clustering technique, implemented in the *cluster* package for R (Maechler et al., 2024). As a hierarchical clustering technique, Ward's method also generates solutions at multiple levels of abstraction (similar to the bass-ackwards technique). It has also been widely used in past, similar research (e.g., in Forbes et al., 2025; Talevich et al., 2017) and has been found to outperform many alternative clustering techniques (e.g., Aldenderfer & Blashfield, 1984). To prepare data for this analysis, correlations between all items were first calculated, and then inverted into *distances* using the formula $1 - r$. Ward's method initially considers all items as independent clusters. At each stage, the two closest clusters in Euclidian space were merged, and the process was repeated until all items were merged into a single cluster.

We estimated these models for solutions containing the same number of elements (which we use here as a general term to refer to components, factors, or clusters) as our focal analyses. To determine if results from the focal analysis generalized, we first calculated congruence coefficients between each robustness analysis and the corresponding focal analysis (i.e., involving the same sample and same number of elements). To determine if an alternative analytic technique uncovered a solution that generalized across samples, we also calculated congruence coefficients between Samples A and B for each alternative analytic strategy. For PCAs and EFAs, the procedures for doing so are well-established (Lorenzo-Seva & ten Berge, 2006; McCrae et al., 1996) and were similar to our focal analyses. When comparing two subtly different techniques on the same sample (i.e., EFA vs. PCA; Varimax vs. Oblimin; no exclusions vs. exclusions), however, we did not apply a Procrustes rotation. We were concerned that doing so might effectively "erase" initial analytic differences, leading to illusory high convergence.

Examining the congruence of PCA and cluster analyses was more challenging. Ward's clustering method is computationally quite distinct from PCA. The only way they can truly be compared is whether they both consider items part of the same element (or not). We therefore created matrices that dichotomously indicated if an item was part of an element within each solution and calculated congruence between them. As explained in further detail below, we argue that Lorenzo-Seva and ten Berge's (2006) criteria for judging solution similarity are inappropriate for these analyses. They were simply not created to judge similarity between such computationally different analyses. Instead, we looked for evidence of *heteromethod* convergent validity (Campbell & Fiske, 1959).

Results

Determining the Maximum Number of Components to Inspect

We first sought to determine the maximum number of components to inspect in our focal PCA analyses. In Sample A, Parallel and MAP analyses suggested that up to 10 and 24 components should be examined (respectively); while in Sample B, they suggested that up to 13 and 34 components should be examined (respectively). We

next inspected solutions containing 1–24 components in Sample A and 1–34 components in Sample B. We considered an item to load onto a component, if the absolute value of its primary loading exceeded .30 and exceeded the absolute value of its secondary loading by .10. In Sample A, solutions containing as many as 24 components could be legitimately interpreted. In Sample B, however, all solutions specifying 16–34 components contained at least one uninterpretable or narrow component (defined by 1–2 items). As such, we further considered solutions containing 1–24 elements in Sample A analyses and 1–15 elements in Sample B analyses.

Focal Analyses: Examining the Replicability of Different Component Solutions

Figures 1 and 2 illustrate the emergence of new components in our focal “bass-ackwards” analyses of Samples A and B, respectively. Correlations between component scores in adjacent solutions were used to track the emergence of new components. To keep these figures readable, we focused on solutions containing 1–14 components (see additional online Tables 1 and 2 for all loadings and additional online Tables 3 and 4 for all intercomponent correlations at <https://osf.io/4utjg/>).

To determine how well each solution replicated across samples, we calculated congruence coefficients, ϕ (Tucker, 1951) for solutions containing 2–15 components, after using a Procrustes rotation to rotate Sample A’s solution to maximum similarity with (the larger and more representative) Sample B (McCrae et al., 1996). This gave greater weight to the more representative sample while still assessing the replicability of findings. Table 4 provides the *minimum* ϕ for any Sample B component and its most strongly related Sample A component. If the minimum ϕ is lower than .85, at least one component in the solution fails to meet the criterion for “fair similarity” across samples (Lorenzo-Seva & ten Berge, 2006). Beyond this, Table 4 also provides the number of components meeting this criterion in each solution.

The results indicate that the two-, four-, and five-component solutions were all fairly similar across samples, all ϕ s $\geq$.85. All subsequent solutions contained at least one component that failed to replicate ($\phi < .85$). We thus initially selected the five-component solution as a “general” solution for further consideration, as it contained the largest number of replicable components.

Alongside the un-replicable components in larger solutions, however, there were also four additional components that were fairly similar across samples (i.e., prestige, dominance, sensation-seeking, and appeasement), and other components which approached this criterion (i.e., $.80 < \phi < .85$; e.g., family, religion). Closer inspection suggested that they may be narrower and reflect more specific facets. We thus conducted further facet-level analyses below.

Robustness Analyses

Beyond examining replicability across *samples*, it is also important to consider how replicable findings are across *analytic techniques*. If a solution can only be found using one very specific technique, many readers may reasonably place less confidence in it. If it generalizes more robustly, there is more reason for confidence. Here, we provide a summary intended to be accessible to the average reader. A more complete description of robustness analyses is provided for

specialists in the additional online Results section and additional online Table 5 at <https://osf.io/4utjg/>.

Broadly, robustness analyses indicated that the five-component solution replicated across many analytic techniques, but that larger solutions were less robust. This was clearest, when the analysis was a relatively modest modification of our focal analyses, such as using EFA (rather than PCA) for factor extraction; performing a Varimax (rather than Oblimin) rotation; or including participants who provided low-quality data in analyses (rather than excluding them). In these analyses, all loadings from the five-element solution were fairly similar to loadings from the focal PCAs of the same sample (all ϕ s $> .85$). Moreover, loadings from these five-element solutions from were also fairly similar across samples (all ϕ s $> .85$). By contrast, larger solutions sometimes failed to meet this criterion. For example, Varimax rotation altered the nature of one (or more) elements in solutions containing six elements or more in Sample A, and in all solutions containing eight elements or more in Sample B (i.e., all minimum ϕ s $< .85$).

Judging the convergence of Ward’s cluster analysis and PCA was more complicated, however. Psychologists have long acknowledged that *monomethod* evidence for convergent validity is often stronger than *heteromethod* evidence (Campbell & Fiske, 1959). The analyses described in the previous paragraph arguably represent *monomethod* evidence, given the computational similarity of the analyses (Fabrigar et al., 1999; Goldberg & Velicer, 2006). Given that cluster analysis is computationally distinct from PCA, however, convergence between these analyses would arguably represent *heteromethod* evidence. Thus, different criteria should apply.

We contend that the five-component and five-cluster solution converge to a sufficient degree to provide *heteromethod* evidence for construct validity. To illustrate, Table 5 presents congruencies from solutions containing five to seven elements in Sample B. (We highlight Sample B because of its greater representativeness; see the additional online Results Section 2 and additional online Table 5 at <https://osf.io/4utjg/> for evidence that these conclusions generalize to Sample A and larger solutions.) The upper panel illustrates that the five-element solution exhibits a classic *validity diagonal* (Campbell & Fiske, 1959). Each cluster is most strongly related to one (and only one) corresponding component and more weakly related to non-corresponding components. For example, Ward’s Cluster 5.1 is strongly related to Principal Component 5.1 (both representing Mastery), but it is more weakly related to Principal Components 5.2–5.5.

When we inspect the six- and seven-element solutions (see Table 5, middle and lower panel, respectively), however, the novel elements did not exhibit this level of convergence. Ward’s Clusters 6.5, 7.7 (which are defined by identical items and labeled “cold individualism”), and 7.6 (labeled “conviviality/growth”) all exhibit weaker relationships with multiple principal components in the six- and seven-element solutions. Inspection of the items that defined these elements indicated that they diverged sufficiently to require different labels.

In sum, the five-component solution consistently generalized to both similar and distinct analyses, but larger solutions generalized to a lesser extent. Thus, we selected the five-component solution for further examination. Nonetheless, more specific constructs (e.g., Social Appeasement; PC7.7) were replicable across at least some analyses. We attempted to locate these constructs within facet-level analyses below.

Figure 1
The Emergence of Components in “Bass-Ackwards” Analyses, Sample A

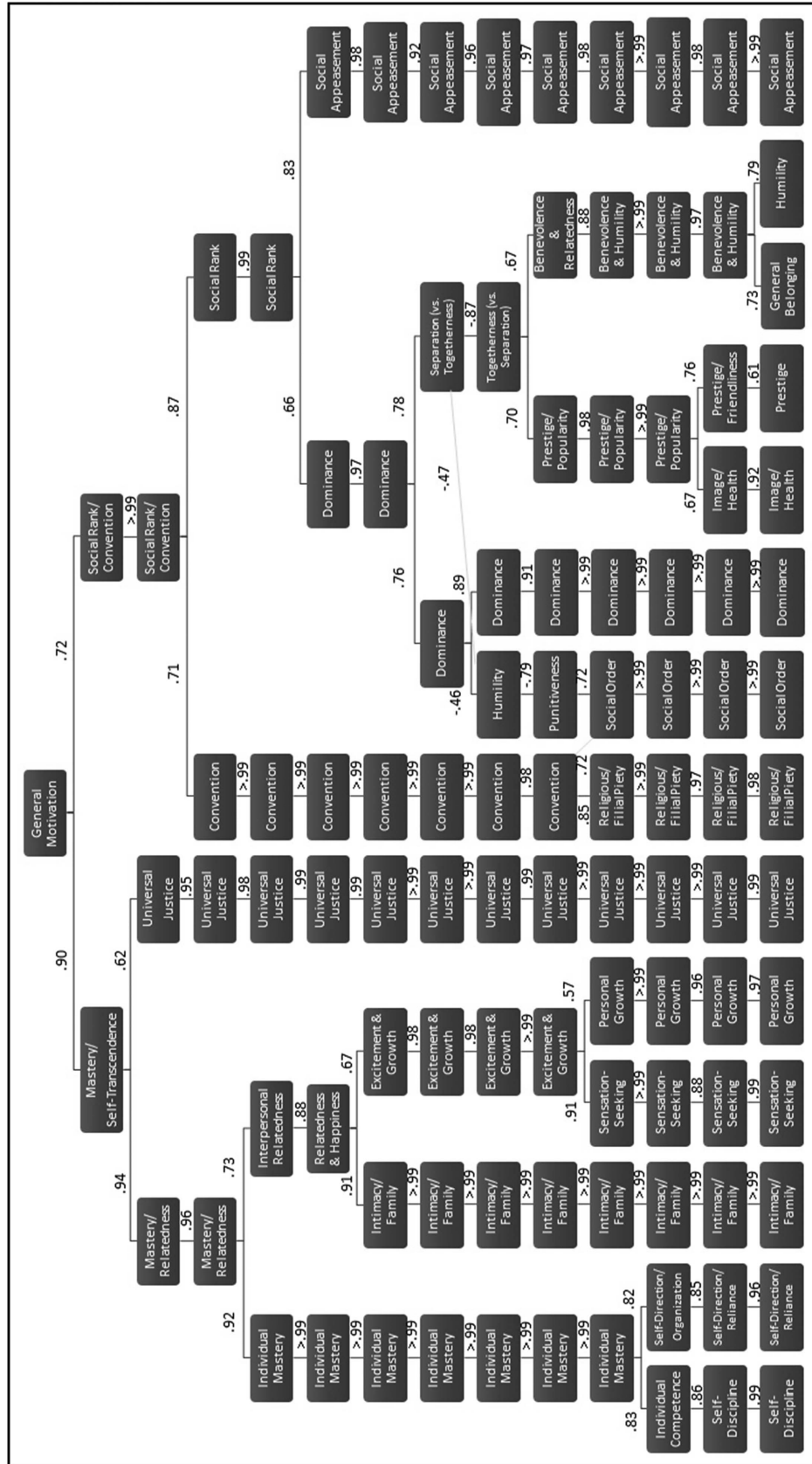


Figure 2
The Emergence of Components in “Bass-Ackwards” Analyses, Sample B

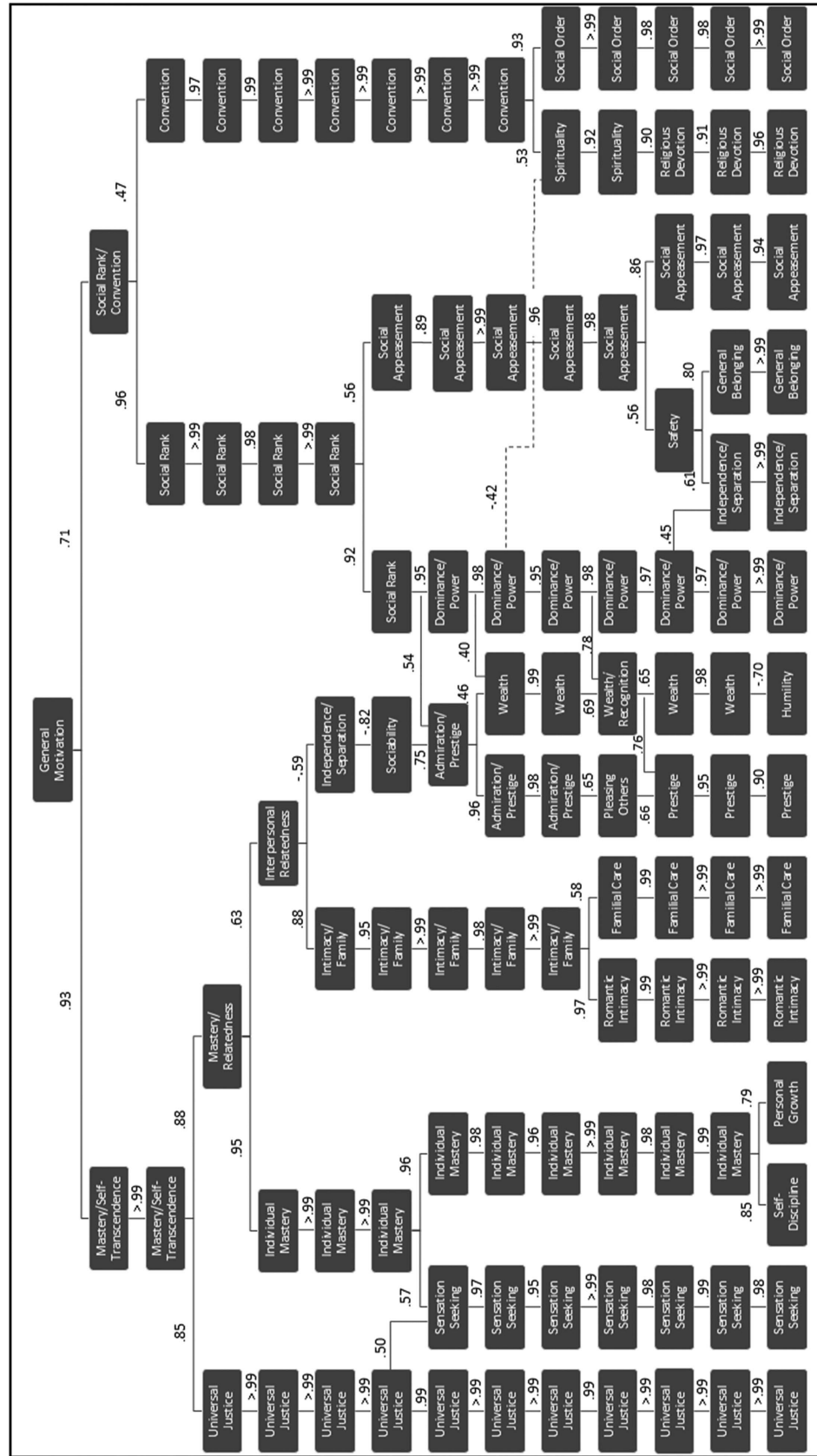


Table 4*Summary of Congruency Analyses From the Focal PCAs*

Solution	Minimum congruence	Number of “similar” components
2	.95 ^a	2
3	.78	2
4	.89 ^a	4
5	.86 ^a	5
6	.34	5
7	.53	6
8	.80	7
9	.62	7
10	.75	8
11	.73	7
12	.63	7
13	.65	5
14	.67	4
15	.67	3

Note. PCA = principal component analysis.

^aAll components in that solution achieved a “fairly similar” level ($\phi \geq .85$) of congruence across studies.

The Five-Component Solution

We next examined the five-component solution in more detail. We focused on items that consistently loaded on the same component in Sample B’s Oblimin-rotated solution and in Sample A’s Procrustes-rotated solution (McCrae et al., 1996). Again, this gave

priority to the larger and more representative Sample B but also considered replicability. Table 6 provides illustrative items and their loadings in both samples (see additional online Table 6 for all loadings at <https://osf.io/4utjg/>). We selected items for Table 6, because they illustrate each component’s breadth (e.g., items from different scales or illustrating different content) and loaded strongly across samples.

Component 1: Individual Mastery

Sixty items consistently loaded onto the first component. They were derived from three of Talevich et al.’s (2017) clusters (from their 14-cluster solution—ambition/ability, intellectual competence, and self-fulfillment); Janoff-Bulman and Carnes’s (2016) Industriousness and Self-Restraint scales; Locke’s (2000) Agency scales; Kasser and Ryan’s (1996) Personal Growth scale; Schwartz’s Self-Direction and Achievement scales; McCabe and Fleeson’s (2016) Conscientiousness Goal scales; Novacek and Lazarus’s (1990) Personal Growth scale; and a number of Achievement scales (i.e., Cassidy & Lynn, 1989; Elliot & Murayama, 2008, mastery; Sommet et al., 2019, mastery). In terms of content, they focused on individual task success, skill development, persistence, self-control, learning, autonomous choice, and personal growth. To holistically capture all aspects of this component (and avoid jingle-jangle problems which could confuse it with the next component), we labeled it *individual mastery*.

Table 5*Illustrative Congruencies Between Principal Component and Cluster Analyses, Study 2*

Ward’s cluster (WC) analysis	Principal component (PC) analysis				
	Mast. (PC5.1)	Rank (PC5.2)	Conv. (PC5.3)	Un. Ju. (PC5.4)	Rel. (PC5.5)
Mastery (WC5.1)	.71	.08	.01	.00	.12
Rank (WC5.2)	.06	.73	.05	.07	.00
Convention (WC5.3)	.00	.02	.90	.00	.00
Univ. Justice (WC5.4)	.00	.00	.00	.87	.00
Relatedness (WC5.5)	.02	.00	.00	.17	.61

WC analysis	Mast. (PC6.1)	Rank (PC6.2)	Conv. (PC6.3)	Un. Ju. (PC6.4)	Sep. (PC6.5)	Rel. (PC6.6)
Mastery (WC6.1)	.71	.12	.01	.01	.04	.06
Rank (WC6.2)	.00	.79	.00	.00	.00	.00
Convention (WC6.3)	.00	.02	.93	.00	.00	.00
Univ. Justice (WC6.4)	.00	.00	.00	.87	.00	.00
Cold Individualism (WC6.5)	.05	.15	.05	.07	.25	.10
Relatedness (WC6.6)	.02	.00	.00	.17	.00	.69

WC analysis	Mast. (PC7.1)	Rank (PC7.2)	Conv. (PC7.3)	Un. Ju. (PC7.4)	Rel. (PC7.5)	Soc. (PC7.6)	App. (PC7.7)
Mastery (WC7.1)	.71	.02	.02	.00	.02	.00	.07
Rank (WC7.2)	.00	.74	.00	.00	.03	.00	.05
Convention (WC7.3)	.00	.03	.89	.00	.00	.00	.00
Univ. Justice (WC7.4)	.00	.00	.00	.89	.00	.00	.00
Relatedness (WC7.5)	.02	.00	.00	.15	.63	.00	.03
Conviviality/Growth (WC7.6)	.27	.02	.00	.00	.00	.30	.14
Cold Individualism (WC7.7)	.05	.12	.05	.06	.08	.05	.38

Note. Values represent congruence between items’ cluster/component memberships. Upper, middle, and lower panels present coefficients from the five-, six-, and seven-element solutions (respectively). Cells highlighted in black provide evidence for heteromethod convergent validity. Cells highlighted in gray provide weak evidence for this. Sep. = separation; Soc. = sociability; App. = appeasement; Mast. = mastery; Conv. = convention; Univ. = universal; Ju. = justice; Rel. = relatedness.

Table 6
Component Loadings From Five-Component Solution for Illustrative Items

Item	Source: Scale(s) (and first authors)	Mastery	Rank	Univ. Justice	Conv.	Relat.
To be highly competent at the skills needed to accomplish the most important tasks in my life (e.g., at my job, school, or elsewhere)	Ambition and Ability (Tal)	.76, .73	.07, -.09	-.14, .03	.00, -.03	.07, -.01
To make my own choices and decisions, without pressure or coercion from others	Personal Growth (Kas), Self-Direction Action (Sch)	.72, .48	-.06, -.03	.10, .07	.00, .07	-.17, .07
To apply myself and put in the hard work and time needed to be successful	Work Ethic (Cas), Industriousness (Jan)	.66, .71	-.02, -.10	-.05, -.10	.09, .09	.15, .09
To be disciplined and follow through on all my plans and intentions	Self-Restraint (Jan), Ambition and Ability (Tal)	.66, .63	-.08, -.13	-.04, -.01	.15, .18	.08, -.09
To get things done	Conscientiousness (McC)	.62, .67	-.03, .02	.03, -.06	.11, .08	.11, .03
To completely master important skills in my life (e.g., relevant to my occupation, schooling, or other things).	Mastery Approach (EII), Ambition and Ability (Tal)	.62, .67	.17, -.10	-.09, .00	-.01, .11	.15, -.04
To have wisdom and be able to make sound judgments based on a mature understanding of life	Self-Fulfillment (Tal)	.59, .56	-.24, -.07	.14, .11	.05, -.02	.16, .08
To do better economically in my life than I did in the past	Economic Self-Approach (Som)	.56, .61	.18, .22	-.04, -.14	-.05, -.03	.09, -.02
To have intellectual experiences and conversations, which peak my imagination and challenge me to think more deeply	Intellectual Competence (Tal)	.52, .44	.05, -.05	.19, .24	-.16, .09	.17, -.12
To learn new things	Mastery Approach (EII), Personal Growth (Kas)	.50, .53	.11, -.08	.13, .12	-.20, .00	.15, .06
To look and feel confident and assured	Agency (Loc), Ambition and Ability (Tal)	.47, .42	.28, .19	-.01, -.02	.05, .05	.24, .28
To grow as a person and develop new and better traits, knowledge, skills, or ways of interacting with others	Personal Growth (Nov)	.42, .63	.01, -.18	.17, .04	-.09, -.04	.29, .13
To have distinction and social prestige among others	Prestige (Che)	.01, .24	.72, .47	-.04, -.12	.08, .12	.04, -.09
To be famous and have my name known to many people	Fame (Kas)	-.16, .07	.72, .52	.10, -.01	.01, .09	.02, -.16
To buy and own many expensive things that show my wealth	Wealth (Kas), Power Resources (Sch), Financial Success (Tal)	-.01, .17	.69, .54	-.11, -.19	.02, .07	.06, -.09
To receive awards and recognition	Power/Achievement (Nov)	.04, .25	.67, .49	.00, -.02	.03, -.01	.15, .00
To be the center of others' attention	Extraversion (McC)	-.16, -.10	.66, .52	.07, .02	.05, .13	.08, -.05
To have the authority to give orders to others and be obeyed	Dominance (Cas), Agency (Loc)	.06, .00	.64, .49	.01, -.03	.17, .30	-.06, -.03
To ensure that I do not lose status and move lower on the social hierarchy	Status (Nee)	.17, .22	.60, .55	-.06, -.16	.12, .07	-.01, .00
To use aggressive tactics to get my way	Dominance (Che)	-.13, -.03	.60, .41	.00, .02	.12, .22	-.16, -.30
To win the acceptance and approval of others	Exclusion Concern (Nee), Communal Submission (Loc)	-.06, .06	.59, .53	.13, .09	.07, -.10	.14, .26
To meet and flirt with possible dating partners or new romantic partners	Mate-Seeking (Nee)	-.01, .01	.53, .39	.08, .04	-.06, .04	.00, .22
To ensure that those who are poor, worse off, and at the bottom of society are provided for	Social Dominance Orientation Con-trait Anti-egalitarianism (Ho), Fairness (Gra), Social Justice (Jan)	-.03, .08	-.02, -.01	.80, .67	.04, .02	.00, -.14
To not use stereotypes about Blacks or other historically disadvantaged racial groups, as this is wrong	Internal Motivation to Respond without Prejudice (Pla)	.00, .07	-.13, -.12	.75, .55	-.03, -.22	-.09, .05
To ensure that all people are treated fairly and justly, even those I do not know	Fairness (Gra, Jan), Universalism Concern (Sch), Social Values (Tal)	.05, .15	-.01, -.07	.75, .69	.01, .09	.05, -.02
To encourage everyone to have empathy and compassion for those who are suffering	Care/Harm (Ata, Gra, Jan), Virtue (Tal)	-.02, .12	-.08, -.05	.75, .60	.12, .10	.14, .17
To create a peaceful world	Community Contribution (Kas), Morals and Values (Tal)	.02, .05	.03, .13	.68, .52	.11, .16	.11, .12
To ensure that schools teach children about our country's history of racism, classism, sexism, and homophobia	LWA Anti-Conventionalism (Cos)	-.09, .06	.20, .21	.68, .65	-.20, -.27	-.01, -.17
To be tolerant of people who are different from me and allow them to follow their own ways	Universalism Tolerance (Sch)	.19, .25	-.12, -.11	.65, .59	-.20, -.12	.03, .00

(table continues)

Table 6 (*continued*)

Item	Source: Scale(s) (and first authors)	Mastery	Rank	Univ. Justice	Conv.	Relat.
To support bans on hateful and intolerant forms of speech	LWA Censorship (Cos)	-.05, .02	.12, .24	.62, .46	.02, -.15	-.06, -.14
To protect the natural environment from destruction or pollution	Universalism Nature (Sch)	.10, .14	.01, .13	.61, .60	.01, -.02	.04, -.16
To maintain the traditional, "old fashioned" values and ways of thinking within my culture	RWA (Alt), Tradition (Sch)	.08, .01	.05, .16	-.12, -.09	.78, .66	-.01, -.02
To follow the customs and traditional practices of my religion	Tradition (Sch), Religion and Spirituality (Tal), Altruism (Nov)	-.05, -.02	-.04, .02	-.06, -.07	.76, .79	.17, .14
To please God	Purity (Gra), Religion and Spirituality (Tal)	-.09, -.05	-.12, -.09	-.08, -.13	.73, .81	.23, .18
To ensure that children in my country are taught to be loyal to it	In-Group (Ata, Gra)	.06, -.02	.10, .22	.02, -.03	.70, .69	.02, .12
To trust that there is a good reason why traditional ways of living have lasted so long, even when I do not fully understand it	Social Order (Jan)	.16, .07	.07, .22	-.13, -.06	.69, .62	.02, .05
To ensure my country is safe and protected from all threats	Security Societal (Sch)	.16, .09	-.03, .09	.13, .15	.66, .64	-.05, -.14
To respect and obey my parents and my elders and ensure that others do the same	Authority (Ata, Gra), Family (Tal)	.09, .01	.06, .14	.05, -.03	.62, .56	.06, .24
To see that men and women continue to occupy their proper and different roles in society	Authority (Gra)	.08, .06	.25, .27	-.07, -.07	.61, .55	-.14, -.02
To ensure that those who violate God's laws are punished	RWA (Alt)	-.08, -.09	.22, .26	.01, .05	.58, .55	-.05, -.08
To oppose those who have no loyalty to their country or betray it	In-Group (Ata, Gra)	.13, .06	.15, .17	-.06, .08	.54, .57	-.13, -.19
To share my life with someone I love	Meaningful Relationships (Kas), Affiliation (Nov), Security and Belonging (Tal)	.01, -.01	.10, .12	.04, -.04	.08, .16	.65, .68
To feel emotionally intimate with my romantic partner—like we can share anything and be supportive and validating with one another	Mate Retention (Nee), Security and Belonging (Tal)	.01, -.03	.09, .17	.03, .04	.07, .05	.65, .60
To be a committed romantic partner and do what needs to be done to keep my partner happy and invested in our relationship	Mate Retention (Nee), Affiliation (Nov)	.01, .08	.18, .21	-.03, -.02	.11, .15	.60, .49
To feel passion and sexual intimacy toward my partner	Mate-Seeking (Nee), Sensation-Seeking (Nov), Security and Belonging (Tal)	.04, .06	.16, .29	-.01, -.06	.11, -.05	.57, .43
To grow, develop, and deepen my relationships with those I care about	Social Approach (Ell)	.13, .14	-.10, -.16	.29, .30	.08, .05	.51, .49
To enjoy the company of other people	Extraversion (Tal)	.07, .05	.10, .16	.29, .33	.04, .03	.50, .50
To have people in my life who give me a feeling of belonging and connection	Communism (Loc), Extraversion (McC), Affiliation (Nov)	.15, .20	.08, -.01	.22, .24	-.02, .00	.50, .47
To be close to my family members and have a good relationship with them	Kin Care Family (Nee), Affiliation (Nov), Family (Tal)	.10, .19	-.16, -.16	.06, .09	.29, .24	.43, .45
To have people in my life who understand me	Communism (Loc)	.21, .09	.09, .06	.28, .28	-.02, .04	.41, .53
To ensure that my friends and family know they can rely on me	Benevolence Dependability (Sch)	.25, .22	-.15, -.15	.26, .27	.18, .07	.37, .52

Note. Bold font indicates an item's primary loading. The first value indicates the Oblimin-rotated component loading from Sample B, and the second value indicates the Procrustes-rotated component loading from Sample A. To indicate the source of each item, the first three letters of the first author's name are presented in parentheses. See starred references for full source information. Univ. = universal; Conv. = convention; Relat. = relatedness; LWA = left-wing authoritarianism; RWA = right-wing authoritarianism.

Component 2: Social Rank

Fifty-one items consistently loaded on the second component. They were largely derived from Prestige and Dominance scales (i.e., by Cassidy & Lynn, 1989; Cheng et al., 2010); Kasser and Ryan's (1996) Extrinsic Aspiration scales (i.e., fame, wealth, and image aspirations); Schwartz's Power and Achievement scales; Novacek and Lazarus's (1990) Power/Achievement scale; Neel et al.'s (2016) Status, Mate-Seeking, and Exclusion Concern scales; a variety of Locke's (2000) Interpersonal Circumplex scales; McCabe and Fleeson's (2012, 2016) Extraversion Goal scales; and Talevich et al.'s (2017) power and security/belonging clusters. In terms of content, they describe values for being admired and recognized by others, coercing others through intimidation, having others follow one's orders, having money and possessions, not being excluded or judged negatively by others, and finding a mate/sexual partner. To holistically capture all aspects of this component (and avoid possible jingle-jangle problems with the previous component), we labeled it *social rank*.

Component 3: Universal Justice

Forty-seven items consistently loaded on the third component. They were derived from sources such as Schwartz and Cieciuch's (2021) Universalism scales (i.e., concern, tolerance, nature); scales measuring the Individualizing Moral Foundations (i.e., harm, fairness/equality; Atari et al., 2023; Graham et al., 2011); Janoff-Bulman and Carnes's (2016) Social Justice, Helping/Fairness, and Not-Harming Moral Motivation scales; Kasser and Ryan's (1996) Community Contribution scale; Ho et al.'s (2015) Social Dominance Orientation scales (all con-trait items suggesting support for egalitarianism and opposition to group-based domination); Costello et al.'s (2022) Left-Wing Authoritarianism scales (specifically from its Top-Down Censorship and Anti-Conventional sub-scales); Plant and Devine's (1998) Internal Motivation to Respond Without Prejudice scale; and Talevich et al.'s (2017) virtues and morality/values clusters. In terms of content, they described values related to applying justice equally and blindly to all people, creating intergroup equality and peace, not harming others, avoiding and (even censoring others') expressions of stereotypes and prejudice, having empathy for and caring for the less fortunate, being tolerant of those who are different, and protecting the environment. To holistically describe this component, we labeled it *universal justice*.

Component 4: Cultural Conventionality

Thirty one items consistently loaded on the fourth component. They were derived from scales such as the Binding Moral Foundations (i.e., respect for authority, in-group loyalty, and purity; Atari et al., 2023; Graham et al., 2011); Janoff-Bulman and Carnes's (2016) Social Order scale; Right-Wing Authoritarianism scales (R. A. Altemeyer, 2006; Dunwoody & Funke, 2016); tradition and security values (Schwartz & Cieciuch, 2022); and Talevich et al.'s (2017) religion and spirituality cluster. In terms of content, they described values to preserve the cultural conventions of the United State's dominant cultural group, follow its religion, obey its established authority figures, be loyal to one's family and to the larger in-group, and punish those who deviate from its cultural norms. To holistically capture all aspects of this component, we labeled it *cultural conventionality*.

Component 5: Interpersonal Relatedness

Twenty-three items consistently loaded onto the fifth component. They were derived scales such as Kasser and Ryan's (1996) Meaningful Relationships scale; Novacek and Lazarus's (1990) Affiliation scale; Locke's (2000) Communion scale; Neel et al.'s (2016) Mate Retention, Kin Care, and Mate-Seeking scales; Elliot et al.'s (2006) Social-Approach scale; McCabe and Fleeson's (2012, 2016) Extraversion Goal scales; Schwartz and Cieciuch's (2022) Benevolence scale; and Talevich et al.'s (2017) family and security/belonging clusters. In terms of content, they described a participants' values for a satisfying (i.e., passionate, intimate, committed) romantic relationship, mutually supportive relationships with one's friends and family, and a more general sense of belonging. To holistically describe all aspects of this component, we labeled it *interpersonal relatedness*.

Reliability, Scope, and Intercorrelations

Table 7 provided basic descriptive statistics, ω (see Dunn et al., 2014), the average interitem correlation (AIC), and intercorrelations between these five components. The components were internally reliable and unidimensional, as indicated by ω values that consistently exceeded .70 (and indeed exceeded .90). Beyond this, these components were modestly broad in their scope, as indicated by AICs which consistently fell below .50 and typically below .40 (Clark & Watson, 1995). Nonetheless, they are admittedly narrower in scope (i.e., higher AICs) than we initially expected.

Table 7
Descriptive Statistics and Intercorrelations for the Five General Domains

Descriptive statistic	1	2	3	4	5
<i>M</i> (<i>SD</i>)	2.84 (.59), 2.66 (.71)	1.36 (.60), 1.12 (.69)	2.41 (.69), 2.29 (.83)	1.53 (.82), 1.48 (.91)	3.19 (.64), 2.74 (.83)
ω (i.e., reliability)	0.98, 0.97	0.97, 0.96	0.98, 0.97	0.97, 0.96	0.97, 0.96
AIC (i.e., narrowness)	0.40, 0.35	0.35, 0.29	0.42, 0.35	0.45, 0.41	0.48, 0.44
Interscale correlations					
1. Mastery	—				
2. Social rank	.54, .59	—			
3. Universal justice	.59, .68	.43, .48	—		
4. Cultural conventionality	.53, .53	.58, .51	.38, .39	—	
5. Interpersonal relatedness	.65, .71	.42, .47	.59, .67	.46, .49	—

Note. The first value in each cell provides descriptive statistics from Sample A and the second value from Sample B. AIC = average interitem correlation.

Moreover, they were all positively correlated. Nonetheless, these correlations were modest enough to suggest meaningful distinctions.

Identifying Specific Aspects of the Five General Domains

The five-component solution provides a useful organizing framework, as it illustrates how constructs from prior theories load onto the same higher order domain. Nonetheless, it also overlooks some important, finer grained distinctions (e.g., between universalism tolerance and left-wing authoritarianism). Beyond this, some past constructs are not clearly captured by any of these domains. To overcome this, we conducted additional analyses to identify more specific aspects of value content.

Because many of the additional, replicable components found in our analyses appeared to represent more specific facets of a larger domain (e.g., social rank appeared to fracture into prestige, dominance, and social appeasement), we next conducted a series of focused PCAs. Each PCA included items that consistently loaded onto the same domain in PCAs for both samples. To facilitate the identification of interstitial constructs (Clark & Watson, 2019; Hofstee et al., 1992), we did not exclude items based on cross-loadings. After running initial PCAs, we also considered whether items that loaded onto conceptually similar components from our “bass-ackwards” analysis loaded on the identified facets.

Beyond this, procedures mirrored focal analyses of the full item pool. Parallel and MAP analyses suggested that solutions ranging from two components (i.e., parallel analyses of relatedness items) to nine components (i.e., MAP analysis of mastery items) should be inspected (see additional online Table 7 for more complete summary at <https://osf.io/4utjg/>). Inspection of solutions up to these limits resulted in the identification of three replicable (i.e., cross-sample $\phi_s \geq .85$) subcomponents of rank and relatedness; and two replicable subcomponents of conventionality, universal justice, and mastery. Illustrative items are presented in Table 8 (see additional online Tables 8–13 for all loadings at <https://osf.io/4utjg/>), and we describe each facet below:

Facets of Individual Mastery

Twenty-nine items consistently loaded onto the first mastery facet. They were derived from sources such as Talevich et al.’s (2017) ambition/ability and financial success clusters; McCabe and Fleeson’s (2016) Conscientious Goal scales; Janoff-Bulman and Carnes’s (2016) Industriousness and Self-Restraint scales; and a number of individual achievement scales (e.g., Cassidy & Lynn, 1989, excellence, work ethic; Elliot & Murayama, 2008, mastery/approach; Schwartz & Cieciuch’s, 2022, achievement; Sommet et al., 2019, economic approach; economic self-avoidance) and Individual Security scales (e.g., Neel et al., 2016, self-protection; Schwartz & Cieciuch, 2022, personal security; Novacek & Lazarus, 1990, stress avoidance). In terms of content, they described values for financial success, skill development, and successful task performance as well as successful self-regulation (e.g., planning, persistence, time management, inhibition of undesirable urges, organization, error monitoring). We therefore labeled this facet *self-discipline*.

Twenty-one items consistently loaded onto the second mastery facet. They were derived from Personal Growth scales (by Kasser &

Ryan, 1996; Novacek & Lazarus, 1990); Schwartz and Cieciuch’s (2022) Self-Direction scales (i.e., action, thought), Talevich et al.’s (2017) self-fulfillment, intellectual competence, and ambition/ability clusters; Janoff-Bulman and Carnes’s (2016) Industriousness scale; and Mastery Approach scales (Elliot & Murayama, 2008; Sommet et al., 2019). In terms of content, they described values to develop a clear identity, have enriching experiences, make autonomous choices, accept oneself, and acquire wisdom. We therefore labeled this facet *personal growth*.

Facets of Social Rank

Thirty-three items consistently loaded onto the first social rank facet. They were derived from Prestige scales (by Cassidy & Lynn, 1989; Cheng et al., 2010); Kasser and Ryan’s (1996) Extrinsic Aspiration scales (image, fame/popularity, wealth); Neel et al.’s (2016) Status and Mate-Seeking scales; Novacek and Lazarus’s (1990) Power/Achievement scale; Performance Goal scales (e.g., Sommet et al., 2019, Economic-Other scales); McCabe and Fleeson’s (2012, 2016) Extraversion Goal scales (largely from items intended to measure assertiveness and similar facets); and Schwartz and Cieciuch’s (2022) Achievement and Power scales. In terms of content, they described values for earning the admiration of others through one’s achievements, influencing others, outperforming others, being popular, having an attractive image, and attracting a sexual partner. We therefore labeled it *prestige/popularity*.

Nineteen items consistently loaded onto the second social rank facet. They were derived from sources such as Cheng et al.’s (2010) Dominance scale; Locke’s (2000) Separation (i.e., low communion) and Agentic Separation scales; Talevich et al.’s (2017) Power cluster; and one item each from Schwartz and Cieciuch’s (2022) Power-Dominance scale, and McCabe and Fleeson’s (2016) Extraversion/Dominance scales. In terms of content, they described values for using aggression and revenge to coerce others, having other people obey one’s orders, being emotionally distant from others; and exerting superiority and power over others. We therefore labeled this facet *dominance*.

Eight items consistently loaded onto the third social rank facet. They were derived from sources such as Locke’s (2000) Submission (i.e., low agency) Scale and Neighboring Scales (i.e., Submissive Communion, Submissive Separation); Novacek and Lazarus’s (1990) Stress Avoidance Scale; McCabe and Fleeson’s (2012, 2016) Introversion items (i.e., low extraversion); Schwartz and Cieciuch’s (2022) Interpersonal Conformity and Face Scales; Elliot et al.’s (2006) Social Avoidance Goal Scale; and Talevich et al.’s (2017) Self-Protection cluster. In terms of content, they described values for avoiding social conflict, criticism, embarrassment or being judged as inadequate by others. We therefore labeled this facet *social appeasement*.

Facets of Universal Justice

Thirty-three items consistently loaded onto the first universal justice facet. They were derived from scales such as Schwartz and Cieciuch’s (2022) Universalism scales (i.e., Concern and Tolerance) as well as the neighboring Benevolence and Humility scales; Kasser and Ryan’s (1996) Community Contribution Scale; the Individualizing Moral

Table 8*Loadings of Illustrative Items From Facet-Level Principal Component Analyses*

Item	Source: Scale(s) (and first author)	Self-discipline	Personal growth	
Individual mastery facets				
To be financially successful	Wealth (Kas), Power/Achievement (Nov)	.80, .56	−.19, .11	
To be efficient and not waste time	McCabe Conscientiousness (McC), Ambition and Ability (Tal)	.67, .67	.08, .07	
To be very successful at the most important tasks I set out to do (e.g., at my job, school, or elsewhere)	Prestige (Che); Power/Achievement (Nov); Achievement (Sch); Financial Success (Tal)	.60, .69	.12, .07	
To be seen by others as a responsible person	Communal Agency (Loc)	.58, .42	.06, .30	
To completely master important skills in my life (e.g., relevant to my occupation, schooling, or other things)	Mastery Approach (Ell); Ambition and Ability (Tal)	.52, .58	.24, .16	
To overcome temptation and work toward what is best for me in the long term, rather than what feels good in the moment	Self-Restraint (Jan)	.42, .47	.20, .19	
To have intellectual experiences and conversations, which peak my imagination and challenge me to think more deeply	Intellectual Competence (Tal)	−.07, .05	.82, .55	
To independently develop my own views, opinions, and personal philosophy of life	Personal Growth (Nov), Self-Direction Thought (Sch), Ambition and Ability (Tal)	−.07, −.12	.75, .70	
To develop a strong sense of who I really am	Personal Growth (Kas, Nov); Self-Fulfillment (Tal)	.01, −.09	.73, .79	
To learn new things	Mastery Approach (Ell); Personal Growth (Kas)	−.05, .16	.71, .50	
To make my own choices and decisions, without pressure or coercion from others	Personal Growth (Kas), Self-Direction Action (Sch)	.27, .17	.44, .46	
Item	Source: Scale(s) (and first author)	Prestige/ popularity	Dominance	Social appeasement
Social rank facets				
To earn people's admiration by achieving great things	Prestige (Cas, Che); Fame (Kas)	.83, .73	−.04, −.12	−.01, .14
To make sure that people recognize my unique talents, achievements, and abilities	Achievement (Sch); Prestige (Che)	.76, .61	−.10, −.63	.14, .17
To have an image that others find attractive, appealing, or interesting	Image (Kas); Extraversion (McC); Security and Belonging (Tal)	.68, .63	−.13, −.27	.16, .17
To be wealthy and have a great deal of money	Acquisitiveness (Cas); Wealth (Kas); Power Resources (Sch); Financial Success (Tal)	.65, .71	.10, .13	.00, .31
To ensure that I do not lose status and move lower on the social hierarchy	Status (Nee)	.54, .56	.17, .18	.12, .51
To attract a sexual partner	Mate-Seeking (Nee), Security and Belonging (Tal)	.48, .57	.03, −.75	.02, −.96
To perform better than other people on important tasks	Competitiveness (Cas); Performance Approach (Ell); Separation/Low Communion (Loc); Power (Tal)	.47, .52	.20, .15	.07, .40
To use aggressive tactics to get my way	Dominance (Che)	.08, .67	.71, .64	−.10, −.55
To ensure that other people remain emotionally distant from me	Separation/Low Communion (Loc)	−.07, −.13	.71, .71	.12, .15
To get revenge or get even with those who wrong me	Agentic Separation (Loc); Power (Tal)	.11, .11	.64, .57	.02, .56
To have the power to make people do what I want	Power Dominance (Sch); Extraversion/Dominance (McC)	.25, .21	.59, .58	−.03, −.11
To promote the idea that some groups of people are simply inferior to other groups	Social Dominance Orientation Dominance (Ho)	.16, .14	.54, .55	−.05, −.64
To get my own way, regardless of what others may want	Dominance (Che); Power (Tal)	.22, .28	.46, .53	.03, −.79
To avoid being blamed or criticized by those around me	Stress Avoidance (Nov); Self-Protection (Tal)	.18, .18	.12, −.23	.63, .61
To not make social blunders or mistakes in front of others	Submissive Separation (Loc)	.15, .21	.04, .12	.62, .55
To avoid getting into disagreements, arguments, or conflicts with other people	Social Avoidance (Ell); Submission (Loc); Extraversion/Assertiveness (Rev.; McC); Stress Avoidance (Nov); Self-Protection (Tal)	.04, .38	−.07, .91	.60, .54
To avoid being embarrassed, shamed, or humiliated by others or by my own inadequacies	Submission/Low Agency (Loc); Face (Sch); Extraversion/Sociability (Reverse; McC)	.24, .15	.04, .15	.60, .56
To never make other people angry, annoyed, or upset	Submission/Low Agency (Loc); Conformity Interpersonal (Sch)	.12, −.16	−.02, −.14	.55, .71
Item	Source: Scale(s) (and first author)	Universal concern	Social justice advocacy	
Universal justice facets				
To be a generous person and go out of my way to help others improve their lives	Helping/Fairness (Jan); Community Contribution (Kas)	.87, .81	−.17, −.24	
To be humble and never act as though I am more important than others	Humility (Sch); Morals and Values (Tal)	.74, .78	−.14, −.27	

(table continues)

Table 8 (continued)

Item	Source: Scale(s) (and first author)	Universal concern	Social justice advocacy
To help groups that I am a part of to stay together	Group Affiliation (Nee); In-Group Loyalty (Gra)	.71, .52	-.09, .11
To listen to and understand people who are different from me	Universalism Tolerance (Sch)	.68, .68	.10, .01
To encourage everyone to have empathy and compassion for those who are suffering	Care/Harm (Ata, Gra), Helping/Fairness (Jan), Virtues (Tal)	.65, .68	.21, .12
To ensure that all people are treated fairly and justly, even those I do not know	Universalism Concern (Sch), Fairness (Gra); Helping/Fairness (Jan); Morals and Values (Tal)	.51, .60	.39, .26
To ensure that schools teach children about our country's history of racism, classism, sexism, and homophobia	Left-Wing Authoritarianism: Anti-Conventionalism (Cos)	.02, .01	.74, .81
To work for economic equality in my society and make it so that everyone has roughly the same amount of money and resources	Equality (Ata); Social Justice (Jan)	.01, .04	.74, .67
To do what I can to equalize conditions for different groups of people in society	Social Dominance Orientation Con-Trait Anti-Egalitarianism (Ho)	.17, .29	.71, .60
To support bans on hateful and intolerant forms of speech	Left-Wing Authoritarianism: Top-Down Censorship (Cos)	.11, -.04	.61, .67
To appear as though I am "politically correct" and not prejudiced (e.g., against Blacks or other groups)	External Motivation to Respond Without Prejudice (Pla)	.07, -.04	.44, .55
To not be prejudiced toward Blacks and other historically disadvantaged racial groups, as it is personally important to me	Internal Motivation to Respond without Prejudice (Pla)	.30, .29	.43, .48

Item	Source: Scale(s) (and first author)	Social order	Religious devotion
Cultural conventionality facets			
To ensure that cheaters are caught and punished	Proportionality (Ata)	.82, .77	-.35, -.36
To ensure that everyone will defend their country when they are called to do so	In-Group Loyalty (Ata)	.74, .77	.04, -.04
To ensure my country is safe and protected from all threats	Security Societal (Sch)	.72, .76	.08, -.05
To support a mighty leader for our country, who has the power and strength to do what has to be done	Right-Wing Authoritarianism (Alt); Respect for Authority (Ata)	.62, .67	.11, .07
To honor and cherish the traditional practices of my culture	Tradition (Sch); Authoritarianism Conventionalism (Dun); Respect for Authority (Ata)	.54, .59	.34, .20
To trust that there is a good reason why traditional ways of living have lasted so long, even when I do not fully understand it	Social Order (Jan)	.55, .48	.28, .35
To please God	Purity (Gra), Religion and Spirituality (Tal)	.01, .04	.90, .93
To maintain my religious faith	Religion and Spirituality (Tal)	.00, .05	.90, .91
To follow the customs and traditional practices of my religion	Altruism (Nov); Tradition (Sch); Religion and Spirituality (Tal)	.16, .19	.78, .82
To achieve salvation and be delivered from sin	Religion and Spirituality (Tal)	.10, .13	.82, .80
To grow spiritually	Religion and Spirituality (Tal)	-.05, .01	.77, .72

Item	Source: Scale(s) (and first author)	General belonging	Romantic intimacy	Familial care
Interpersonal relatedness facets				
To make friends and draw others near	Extraversion Sociability (McC), Security and Belonging (Tal)	.88, .79	.01, .04	-.15, -.09
To share fun and meaningful experiences with others	Social Approach (Ell)	.66, .74	.08, -.05	.04, .07
To get along with the people around me and ensure they enjoy spending time with me	Submissive Communion (Loc); Group Affiliation (Nee); Prestige (Che)	.72, .69	-.09, -.12	.13, .06
To have people in my life who understand me	Communion (Loc)	.58, .60	.11, .10	.19, .18
To have people in my life who I can rely on to support me through tough times	Communion (Loc); Meaningful Relationships (Kas); Security and Belonging (Tal)	.54, .43	.04, .09	.30, .31
To feel emotionally intimate with my romantic partner—like we can share anything and be supportive and validating with one another	Mate Retention (Nee); Security and Belonging (Tal)	-.04, .03	.93, .85	.02, -.01
To have a committed, intimate relationship	Social Approach (Ell), Meaningful Relationships (Kas); Affiliation (Nov)	.00, .09	.91, .81	.03, .01
To have a partner who is loyal and faithful to me	Mate Retention (Nee)	.10, -.06	.81, .79	.02, .18
To feel passion and sexual intimacy toward my partner	Mate-Seeking (Nee); Sensation-Seeking (Nov); Security and Belonging (Tal)	.03, -.05	.88, .78	-.06, -.06
To be a committed romantic partner and do what needs to be done to keep my partner happy and invested in our relationship	Mate Retention (Nee); Affiliation (Nov)	.05, .06	.92, .76	-.11, .00
To be close to my family members and have a good relationship with them	Kin Care Family (Nee); Affiliation (Nov); Family (Tal)	-.03, -.01	-.04, -.06	.79, .84

(table continues)

Table 8 (continued)

Item	Source: Scale(s) (and first author)	General belonging	Romantic intimacy	Familial care
To care for my family members	Kin Care Family (Nee)	−.08, −.03	.08, .08	.81, .80
To ensure that my friends and family know they can rely on me	Benevolence Dependability (Sch)	.19, .31	.01, −.03	.66, .63
To be supportive of those close to me	Altruism (Nov)	.18, .32	.02, .03	.65, .50

Item	Source: Scale(s) (and first author)	Sensation-seeking
Interstitial facet		
To enjoy life’s pleasures to the fullest	Hedonism (Sch); Openness to Experience (Tal)	.58, .53
To live an exciting and stimulating life	Sensation-Seeking (Nov), Openness to Experience (Tal)	.54, .48
To be adventurous, explore, and have all sorts of new and different experiences	Sensation-Seeking (Nov); Stimulation (Sch); Openness to Experience (Tal)	.50, .43
To be spontaneous and unconstrained by routines, plans, or habits	Extraversion/Spontaneity (McC), Openness to Experience (Tal)	.49, .43
To have free time to devote to recreation, hobbies, and playfulness	Sensation-Seeking (Nov), Openness to Experience (Tal)	.45, .41
To be true to myself and accept myself and I am	Self-Fulfillment (Tal)	.45, .51

Note. Bold font indicates an item's primary loading. Rev. = reverse.

Foundations (i.e., Care/Harm, Fairness; Atari et al., 2023; Graham et al., 2011); Janoff-Bulman and Carnes's (2016) Helping/Fairness and Not-Harming Moral Motivation Scales; and Talevich et al.'s (2017) Virtues and Morals/Values clusters. In terms of content, they described values for helping other people (broadly construed), compassion for those who are suffering, applying standard of fairness equally to all people, understanding people different from oneself, and being selfless and humble. As such, we labeled this facet *universal concern*.

Sixteen items consistently loaded onto the second facet. They were largely derived from Janoff-Bulman and Carnes's (2016) Social Justice Moral Motivation scale; Atari et al.'s (2023) Equality Foundation scale; Ho et al.'s (2015) Social Dominance Orientation scales (all contrast items indicating support for equality or opposition to group-based dominance); Costello et al.'s (2022) Left-Wing Authoritarianism scales (specifically its Anti-Conventionalism and Top-Down Censorship subscales); Plant and Devine's (1998) Motivation to Respond without Prejudice scales (i.e., both internal and external motivation); and reverse-scored items from scales measuring right-wing authoritarianism (R. A. Altemeyer, 2006; Dunwoody & Funke, 2016). In terms of content, they described values to work for group-based equality, advocate for historically disadvantaged groups (e.g., Black Americans; women; members of the lesbian, gay, bisexual, transexual, queer + community), oppose group-based dominance and prejudice, question traditional values (e.g., traditional gender roles), and censor hateful speech. As such, we labeled it *social justice advocacy*.

Facets of Cultural Conventionality

Twenty-six items consistently loaded onto the first conventionality facet. They were derived from scales measuring the "Binding" Moral Foundations (Atari et al., 2023; Graham et al., 2011; i.e., mostly respect for authority and in-group loyalty; one purity item from Atari et al., 2023); Schwartz and Cieciuch's (2022) Societal Security, Tradition, and Conformity-to-Rules scales; Janoff-Bulman and Carnes's (2016) Social Order scale; and items measuring high right-wing authoritarianism (R. A. Altemeyer,

2006; Dunwoody & Funke's, 2016, Conventionality and Authoritarian Submission scales). In terms of content, they described values for loyalty and pride in one's in-group, upholding its traditions, respecting and following its established authority figures, and ensuring that others do the same. To capture these tendencies, we labeled it *social order*.

Six items consistently loaded on to the second facet. They were derived from Talevich et al.'s (2017) religion/spirituality cluster; Graham et al.'s (2011) Purity Foundation scale; Schwartz and Cieciuch's (2022) Tradition scale; and Novacek and Lazarus's (1990) Altruism scale. Its breadth was narrow, as all items referred to personal devotion toward one's religion. Even items focused on ensuring that *others* followed religious prescriptions failed to consistently load onto it. As such, we labeled this facet *religious devotion*.

Facets of Interpersonal Relatedness

Eleven items consistently loaded on the first relatedness facet. They were derived from Locke's (2000) Communion scales; Kasser and Ryan's (1996) Meaningful Relationship scale; Elliot et al.'s (2006) Social Approach scale; McCabe and Fleeson's (2012, 2016) Extraversion Goal scales; and Talevich et al.'s (2017) Security/Belonging cluster. In terms of content, they referred to values for establishing relationships with people who will share positive experiences, understand them, and support them. Because they did not refer to a particular relationship, we labeled it *general belonging*.

Seven items consistently loaded on the second relatedness facet. They were largely derived from Neel et al.'s (2016) Mate Retention and Mate-Seeking scales; Novacek and Lazarus's (1990) Affiliation scale; and several scales that also contributed items to the general belonging facet (e.g., meaningful relationship aspirations, social approach goals, security and belonging). Importantly, though, these items referred explicitly to a romantic or intimate relationship. As such, we labeled it *romantic intimacy*.

Four items consistently loaded on the third facet. They were derived from Neel et al.'s (2016) Kin Care Family Scale; Schwartz and Cieciuch's (2022) Benevolence scale; Novacek and Lazarus's (1990) Altruism and Affiliation scales; and Talevich et al.'s (2017) family cluster. In terms of content, they all referred to values focused on caring

for, supporting, and being close to one's family (and those "close to me"). As such, we labeled this facet *familial care*.

An Interstitial Construct

The above-described facets accounted for most of the additional elements from our initial analyses that showed some (imperfect) evidence of replicability. However, one such element did not appear as a facet. We next proceeded to inspect it more closely. In the eight-component solution, it consistently appeared alongside four general domains (mastery, convention, universal justice, and relatedness) and three social rank facets. To investigate its robustness, we next reran the eight-component model focusing on items that proved to be reliable markers of these four domains, the three rank facets, and items that consistently loaded onto this component initially. It again appeared and proved to be "fairly similar" across samples ($\phi = .87$). (Appeasement, however, was less replicable; $\phi = .80$, suggesting that it was more replicable as a facet than as an independent component.)

Ten items consistently loaded onto this novel component. They were largely derived from Schwartz and Cieciuch's (2022) Hedonism and Stimulation scales; Novacek and Lazarus's (1990) Sensation-Seeking scales; McCabe and Fleeson's (2012, 2016) Extraversion Goals scales; and Talevich et al.'s (2017) openness to experience cluster. In terms of content, they referred to values focused on experiencing high-arousal positive emotions, having new and different experiences, and being free and unconstrained. As such, we labeled this construct *sensation-seeking*.

Interestingly, these items load onto different domains in the five-component solution. Three items loaded on mastery, one on social rank, one on universal justice, and three loaded inconsistently across samples. As such, we speculate that sensation-seeking may lay interstitial to these domains. Although this should be examined more in future research, it is consistent with psychometric work on the Schwartz values (e.g., Schwartz & Cieciuch, 2022).

Reliability, Scope, and Intercorrelations

Table 9 provides basic descriptive statistics for all facets. The facets were internally reliable and unidimensional, as indicated by α s that consistently exceeded .70. Several facets (namely, religious devotion, romantic intimacy, and familial care) had AICs that exceeded .50, suggesting a rather narrow construct (Clark & Watson, 1995, 2019). Others, however, were broader in scope.

Concerning interfacet correlations, several observations are worth noting. First, different facets within the same domain (bolded in Table 9) tended to be highly correlated with one another but not so highly as to suggest equivalence. However, there were occasional exceptions (e.g., prestige/popularity and appeasement). Second, other correlations tended to be more modest, but there were interesting examples of stronger correlations (underlined in Table 9). Most notably, sensation-seeking appears to represent the center of a constellation of intercorrelated facets across domains. Personal growth, universal concern, general belongingness and familial care were all strongly related to sensation-seeking and to each other. Finally, in contrast to the domains, there were several examples of uncorrelated (i.e., independent) facets (italicized in Table 9). For example, prestige/popularity exhibited minimal correlations with universal concern and all relatedness facets. Religious devotion was also minimally correlated with social justice advocacy.

General Discussion

Summary of Results

Past models distinguish between many different values and superordinate goals (i.e., aspirations, explicit motives, etc.). Although these models converge in some respects, they diverge in other respects. To come to a more holistic understanding of the structure of values, we gathered items from past measures and item sets, standardized them to a common format, eliminated redundancies, and administered them to two large samples of American adults. Analyses indicated that their structure can be parsimoniously described in terms of five broad domains: individual mastery, social rank, interpersonal relatedness, cultural conventionality, and universal justice. These components were robust and clearly appeared in both samples and across both small and large variations in analytic strategy. While these broad domains help to organize constructs from past models within an integrated framework, they also overlook several important, finer grained distinctions. We thus conducted further analyses, which located 13 more specific facets within and between these domains. In the following sections, we first summarize the results in a purely descriptive fashion and then consider how theories may account for them.

Implications of an Item-Level Analysis

Given that our analysis was conducted at the item level, it is important to first consider what conclusions can be made from such an analysis. First, there were occasional "stray" items. For example, an item derived (in part) from Cheng et al.'s (2010) Prestige scale ("to get along with the people around me and ensure they enjoy spending time with me") loaded on the general belongingness facet, rather than the prestige/popularity facet. Thus, analyses of this type can help to refine existing constructs by identifying conceptual carryover.

Beyond this, the item-level analysis helped to map past constructs onto either a specific facet, a broader domain, or to multiple domains. In some cases, most items from a preexisting construct loaded onto one facet (e.g., mate retention on the intimacy facet). In other cases, they loaded onto multiple facets of the same domain (e.g., meaningful relationships loaded onto general belonging and romantic intimacy facets of relatedness). In still other cases, they loaded onto multiple domains (e.g., Locke's, 2015, agency and Schwartz & Cieciuch's, 2022, achievement loaded on both mastery and social rank). Table 10 illustrates these mappings. In the following sections, we describe the most important features of these mappings.

Five Domains of Values, Five Levels of Collectivity

An interesting feature of the five domains is that they focus on different levels of social collectivity, which represent different levels of identity (e.g., individual identity, dyadic identity, collective identity, etc.; see Brewer & Gardner, 1996; Janoff-Bulman & Carnes, 2016). Specifically, Individual mastery focuses on *the self as an independent agent*. Social rank focuses on *the position of oneself within the group*. Interpersonal relatedness focuses on one's relationships with *close others*. Cultural conventionality focuses on one's commitment to the *dominant cultural group*. Universal justice focuses on *relationships between different cultural groups*. Thus, it will be important for future

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Table 9
Descriptive Statistics for Facets

Descriptive statistic	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>M (SD)</i>	2.79 (0.65), 2.61 (0.76)	2.94 (0.61), 2.77 (0.73)	1.79 (0.74), 1.35 (0.84)	0.56 (0.55), 0.56 (0.62)	2.02 (0.83), 1.87 (0.98)	2.79 (0.68), 2.56 (0.83)	1.77 (0.83), 1.77 (0.96)	1.29 (0.79), 1.30 (0.91)	2.07 (1.28), 1.84 (1.31)	3.00 (0.70), 2.47 (0.89)	3.20 (0.91), 2.74 (1.30)	3.42 (0.67), 3.13 (0.82)	2.83 (0.71), 2.54 (0.85)
<i>ω</i> (i.e., reliability)	0.95, 0.96	0.92, 0.93	0.95, 0.96	0.91, 0.93	0.86, 0.90	0.96, 0.97	0.91, 0.93	0.95, 0.96	0.93, 0.93	0.91, 0.93	0.93, 0.97	0.88, 0.86	0.93, 0.97
<i>AIC</i> (i.e., narrowness)	0.36, 0.42	0.35, 0.40	0.35, 0.41	0.33, 0.37	0.39, 0.47	0.39, 0.45	0.36, 0.42	0.40, 0.45	0.61, 0.62	0.45, 0.50	0.60, 0.76	0.53, 0.49	0.39, 0.45
<i>Interscale correlations</i>													
1. Discipline	—												
2. Personal growth	.74, .80	—											
3. Prestige/popularity	.22, .28	.12, .17	—										
4. Dominance	<u>.66, .64</u>	.51, .51	.58, .65	—									
5. Social appeasement	.49, .62	.29, .47	.35, .44	.57, .62	—								
6. Universal concern	<u>.57, .64</u>	<u>.71, .76</u>	<u>.08, .12</u>	.42, .46	.43, .52								
7. Social justice advocacy	.27, .42	.37, .50	.28, .30	.40, .48	.39, .47	.62, .73	—						
8. Social order	.51, .57	.44, .42	.55, .45	.64, .55	.37, .49	.43, .42	.26, .27	—					
9. Religious devotion	.33, .37	.33, .26	.23, .09	.32, .24	.20, .25	.32, .32	-.07, .03	.64, .64	—				
10. General belongingness	.53, .64	.59, .69	.09, .17	.54, .61	.50, .58	<u>.71, .76</u>	.37, .50	.38, .43	.34, .31	—			
11. Romantic intimacy	.38, .43	.40, .43	.09, .08	.41, .36	.25, .25	.37, .43	.17, .27	.31, .30	.26, .28	.52, .52	—		
12. Familial care	.53, .59	<u>.64, .62</u>	-.08, -.06	.29, .30	.25, .32	<u>.68, .69</u>	.22, .32	.32, .38	.39, .43	.69, .65	.49, .51	—	
13. Sensation-seeking	.52, .61	<u>.70, .76</u>	.17, .21	.55, .57	.34, .42	<u>.62, .68</u>	.42, .51	.40, .35	.26, .17	<u>.70, .69</u>	.41, .41	<u>.57, .55</u>	—

Note. The first value in each cell provides descriptive statistics from Sample A and the second value from Sample B. *AIC* = average interitem correlation. Bold font indicates correlations between different facets of the same domain. Underlined font indicates strong correlations across domains (described further in text) Italic font indicates uncorrelated facets (described further in text).

work to explain why these different levels of collectivity appear to be a powerful organizing principle in people's values.

The Need to Distinguish Between Individual Mastery and Social Rank

Many prior theories posit a broad agentic value that includes both social rank and Individual mastery. Empirically, however, the distinction between mastery and rank was quite robust. It was apparent even in our two-component solution (see Figures 1 and 2), with mastery loading on a common component with relatedness and universal justice; and rank loading on a common component with conventionality. This suggests there is a fundamental difference between mastery and rank that surpasses their commonality. One possibility is that social rank leads people to attend closely to established social standards, so one can be judged positively according to them. By contrast, mastery may lead people to turn away from established standards to discover new and better ways of being. This explanation is consistent with loadings in the two-component solution, with patterns of interscale correlations, and their item content. For example, achievement value (Schwartz & Cieciuch, 2022) and financial success (Talevich et al., 2017) items that solely referenced individual achievement largely loaded onto mastery, while items from the same sources that referenced *social recognition* of one's achievement largely loaded on rank.

The Need to Include Both Interpersonal and Moral/Ideological Values

Some previous models focus solely on interpersonal values (e.g., Locke, 2000); while others focus solely on moral/ideological values (e.g., Duckitt & Sibley, 2009; Graham et al., 2011; Janoff-Bulman & Carnes, 2016). The current analysis suggests that a comprehensive taxonomy should incorporate both. Convention and universal justice were largely derived from prior moral/ideological values (e.g., moral foundations, moral motives, right/left-wing authoritarianism), while mastery, rank, and relatedness were largely derived from prior interpersonal values (e.g., mastery, power, meaningful relationships; see Table 10).

Nonetheless, it is important to emphasize that this distinction is by no means absolute. Most tellingly, Janoff-Bulman and Carnes (2016) argued that individual behavior can also be moralized, such as industriousness and self-restraint. Both industriousness and self-restraint loaded onto individual mastery, suggesting that there is a moral component to this domain as well. For this reason, we suggest that the more fundamental distinction is the level of collectivity a value is focused on—for example, individual, dyadic, cultural group, and intergroup.

Interestingly, relatively few moral/ideological values loaded onto rank or relatedness. This could suggest that these domains are seldom moralized. We suspect, however, that the models we drew upon have yet to fully incorporate the way in which these domains are moralized. For example, some may consider it immoral to show signs of "weakness" (e.g., Masculine Honor Values; Barnes et al., 2012). Likewise, harming one's romantic partner or kin may sometimes be seen as morally abhorrent in a way that goes beyond in-group disloyalty (convention) or broad prohibitions against harming any person (universal justice; e.g., Qirat in Iran; see Atari et al., 2020).

Future research should therefore investigate how rank and relatedness are moralized.

Finer Distinctions Within the Interpersonal Domains

Beyond this, prior models have subdivided each domain in different fashions (see Table 1). The current analysis begins to reveal which of these distinctions is most robust. Within relatedness, it appears to be most important to distinguish between different *types* of close relationships, as illustrated by facets focused on familial care and romantic intimacy. Kenrick et al. (2010) suggested that humans are fundamentally motivated to maintain these relationships precisely because they are critically important to the biological evolution of our species. The final facet of relatedness refers to a more general value for supportive relationships. This echoes theories which suggest that humans have a general need for belongingness, which can be satisfied through many relationships (e.g., Bowlby, 1969/1983; Ryan & Deci, 2017, etc.).

Within social rank, it is most important to distinguish between different *techniques* used to pursue high social rank, such as facets focused on dominance versus prestige/popularity. These very directly echo dual strategies theory (Cheng et al., 2010; Maner, 2017). Interestingly, social rank's final facet—appeasement—represents strategies typically associated with submission (e.g., Locke, 2000). Although this is seemingly the opposite of high rank, appeasement is *positively* correlated with both prestige/popularity and dominance. It is important to consider that appeasement's defining aim—avoiding negative judgment by others—would be useful in preserving one's current rank regardless of how high that rank is. Furthermore, most adult Americans (our focal population) occupy an intermediate position within a multilayered hierarchy. Thus, they may alternate between dominance or prestige-seeking with subordinates and the appeasement of superiors.

Within individual mastery, it is most important to distinguish between different *personal standards of excellence* that individuals aspire to. Specifically, self-disciplines appears to focus on improving one's financial standing, performance at important tasks, and skills that are instrumentally useful toward these ends (e.g., organization, efficiency, self-restraint, etc.). By contrast, personal growth appears to focus on developing a strong personal identity by having enriching experiences and making autonomous choices. While there is clear precedent for each construct, it is relatively novel to suggest they are different facets of the same domain. Nonetheless, the present studies establish a clear empirical relationship between them, and there is a notable conceptual correspondence between them as well.

Finer Distinctions Within the Group-Focused Domains

The current investigation also helps to determine which distinctions are most robust within the group-focused domains. Within convention, it is most important to distinguish between different *aspects* of convention that one aims to uphold. Specifically, religious devotion appears to focus upon a completely personal desire to follow conventional practices, specifically of one's religion. By contrast, social order appears to focus on a desire to uphold the conventional order that binds the in-group together (Graham et al., 2017), both by conforming to these norms oneself and by ensuring that others follow them. Social order thus has a normative component that religious devotion lacks.

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Table 10
Mappings of Previous Constructs to Obtained Domains and Facets

Mapping	Individual mastery	Social rank	Relatedness	Cultural convention	Universal justice
Focus Domain general scales	Self as independent agent Mastery (Ell), industriousness (Jan), communal agency (Loc), agency (Loc) ^a	Position of oneself in group Power (Sch, Tal), exclusion concern (Nee), agency (Loc) ^a	Close others Meaningful relationships (Kas), social approach (Ell), affiliation (Nov)	Cultural group Tradition (Sch)	Intergroup relations (None)
Facet 1-specific scales	<i>Self-discipline</i> : ambition/ability (Tal.), conscientious (McC), self-restraint (Jan), work ethic (Cas), achievement (Sch) ^a , financial success (Tal) ^a	<i>Prestige/Popularity</i> : prestige (Che), extrinsic aspirations (Kas), performance goals (Ell), status (Nee), achievement (Sch) ^a , financial success (Tal) ^a , extraversion (McC) ^a	<i>General belonging</i> : communion (Loc), extraversion (McC) ^a	<i>Social order</i> : in-group loyalty (Ata, Gra), respect for authority (Ata, Gra), social order (Jan), RWA (Alt, Dun), purity (Ata)	<i>Universal concern</i> : universalism (Sch), care/not harming (Ata, Gra, Jan), fairness (Gra), virtues, morals/values (Tal), community contribution (Kas), benevolence (Sch) ^a
Facet 2-specific scales	<i>Personal growth</i> : self-direction (Sch), personal growth (Kas, Nov), self-fulfillment (Tal)	<i>Dominance</i> : dominance (Cas, Che), agentic separation (Loc), separation (Loc)	<i>Romantic intimacy</i> : mate retention (Nee)	<i>Religious devotion</i> : religion and spirituality (Tal), purity (Gra)	<i>Social justice advocacy</i> : social justice (Jan), equality (Ata), LWA (Cos), internal nonprejudice (Pla), reversed RWA (Alt, Dun), reversed SDO (Ho)
Facet 3-specific scales					
Interstitial facet	<i>Sensation-seeking</i> : Hedonism (Sch), sensation-seeking (Nov), openness to experience (Tal), extraversion (McC) ^a	<i>Appeasement</i> : submission (Loc), social-avoidance (Ell), self- protection (Nee, Tal), introversion (McC)	<i>Familial care</i> : kin care (Nee), family (Tal), benevolence (Sch) ^a		

Note. Letters in parentheses represent the first three letters of first authors' name. See starred references for full source information. The name of the facet derived in the current investigation is presented in italics. SDO = social dominance orientation; RWA = right-wing authoritarianism; LWA = left-wing authoritarianism.

^a A construct that loaded on two or more domains/facets.

Within universal justice, it is most important to distinguish between different *aspects* of justice. Specifically, universal concern appears to reflect a value to apply standards of morality (e.g., helping, understanding, not harming) equally to all people in a fashion that is compassionate, open-minded, and flexible. By contrast, social justice advocacy appears to reflect a value to support groups that have been historically disadvantaged in a fashion that is more normative and proscriptive.

In both domains, it is interesting to consider the role of “authoritarianism” in shaping facet-level distinctions. Interestingly, high right-wing authoritarianism items (R. A. Altemeyer, 2006; Dunwoody & Funke, 2016) largely loaded onto social order and never onto religious devotion (despite their highly religious theme). Likewise, high left-wing authoritarianism items (Costello et al., 2022) largely loaded onto social justice advocacy and never onto universal concern. Nonetheless, it would be an exaggeration to equate social order or social justice advocacy with “authoritarianism” entirely. Items representing *low* right-wing authoritarianism and social dominance orientation loaded onto social justice advocacy, alongside items representing *high* left-wing authoritarianism. Moreover, the most socially problematic aspects of both right- and left-wing authoritarianism—namely, authoritarian aggression (Dunwoody & Funke, 2016) and anti-hierarchical aggression (Costello et al., 2022)—failed to load onto either social order or social justice advocacy. Based on these considerations, it would be more appropriate to label both social order and social justice advocacy as highly “normative” or “adversarial” values, rather than “authoritarian” values. In other words, they describe a value focused on influencing others through open opposition. Future research is needed to better understand the place of “authoritarian” values within the broader structure of values (see also Wilkowski, Rivera, et al., 2025).

Sensation-Seeking as an Interstitial Construct

One surprising finding was that no domain (or subfacet thereof) focused on the pursuit of pleasure and sensual stimulation. However, the eight-component solution from our initial “bass-ackwards” analysis yielded such a component (alongside other, less replicable components), and we were able to identify items that reliably loaded onto it in follow-up analyses. Interestingly, these items loaded onto different domains in the five-component solution (i.e., mastery, rank, universal justice). Moreover, it exhibited strong correlations with a variety of domains and facets (e.g., mastery, general belonging, universal concern, dominance, familial care). We therefore suggest that it represents an interstitial construct, which lies between several domains. Further research is needed to understand its precise location, but it likely is most closely related to individual mastery.

The Need for Further Research on the Commitment to Avoid

Although the current investigation begins to organize constructs from past theories within an integrated framework, it must also be acknowledged that there were several issues with the derived structure. First, several facets exhibited low endorsement rates (e.g., dominance, social order; see Table 9). This could create measurement issues related to range restriction and suggest conceptually that these are less prominent aspects of our value system than some theories

suggest. Second, items predominantly loaded in one direction, such that reverse-scored or negatively keyed items were extremely rare. This creates issues with measurement validity, as it is difficult to separate methodological artifacts (e.g., acquiescence bias) from participants’ substantive response to the items (e.g., Paulhus & Vazire, 2007). Finally, very few domains or facets were uncorrelated or negatively correlated with each other, such that most were positively correlated (see Tables 7 and 9). This runs counter to most theories’ assumption that different value domains are quite distinct, and that some values (e.g., self-transcendence and self-enhancement values; Schwartz, 2012) even conflict with one another. This issue is not unprecedented (see Bradshaw et al., 2023; Schwartz, 2012), and Schwartz (1992) commonly suggests ipsatizing responses (i.e., centering responses around participants’ mean response) can remove methodological artifacts and reveal conflicts between values. However, our attempts to ipsatize this item set did not overcome this issue and largely reduced the reliability of results (see additional online Results section 4 at <https://osf.io/4utjg/>).

It is of course possible that these results accurately describe the nature of values and are not “issues” at all. For example, it is possible that conflict is only apparent with more concrete goals, and that the current items were simply too abstract for participants to notice conflict between them. However, we were surprised that even items that appeared to be logical opposites of one another did not exhibit clear inverse correlations. For example, the item, “To never make others angry, annoyed, or upset” was correlated, $r = .09$, with the item, “To use unexpected flashes of anger to intimidate others into doing what I want” in Sample B. Similarly, the item, “To have the authority to give orders to others and be obeyed” was correlated, $r = .085$, with the item, “To avoid having authority over other people” in Sample B.

One alternative explanation for all such issues may lie in a somewhat technical consideration—namely, our use of the standard *unipolar response scale*. In the present studies, we followed the predominant practice and asked how committed versus uncommitted participants were to various values. As a result, participants were never given the opportunity to indicate that they were *committed to avoiding* the described value (e.g., that they avoided using “unexpected flashes of anger to intimidate others into doing what I want”). This could obscure a very large source of variation in superordinate goals (e.g., dominance) and create the appearance that some facets are unimportant. Beyond this, the unipolar response scale could lead items that seem to be logical opposites to be uncorrelated with one another. Some participants may be largely *indifferent* to angering others (for example) and take few steps to prevent it or to use it to intimidate others. If so, these participants would honestly indicate that they are not committed to either avoiding or promoting anger in others. The trouble is that this response format did not allow us to differentiate these indifferent participants from those who are *opposed* to intentionally angering others. Future research should thus incorporate a bipolar response scale, which asks participants if they are committing to approaching a described goal, uncommitted to it, or committed to avoiding it (see Wilkowski et al., 2020, 2022, for an example). If applied to an item set that was more carefully balanced, it could reveal greater variation in generally undesirable domains, reveal conflict between different values, resulting in more negatively keyed items and greater differentiation between constructs.

Toward an Integrated, Empirically Derived Taxonomy

Beyond the question of how previous *theories* can be integrated, another important question is how *different empirically derived frameworks* can be integrated. In reviewing lexical studies of the structure of values, Wilkowski, Williamson, et al. (2025) noted that different studies conducted in different cultures vary in the number of constructs produced, with a median of five to six constructs. Interestingly, at least one construct from each study clearly resembled each of Schwartz's (2012) four higher order values (i.e., self-enhancement, openness to change, self-transcendence, conservation). Additional constructs varied but tended to lie interstitial to a higher order value or divide in two. The current results are compatible with this conclusion. Schwartz and Cieciuch's (2022) items representing conservation, self-enhancement, openness-to-change, and self-transcendence predominantly loaded on convention, social rank, mastery (especially its personal growth facet), and relatedness/universal justice (respectively). Future research should continue to examine the psychometric structure that can be derived from fuller phrases, as they might allow some distinctions to be made more reliably. The distinction between relatedness and universal justice may specifically be more reliable with full phrases.

Beyond this, another important question is how the current results relate to Talevich et al.'s (2017) findings. As noted in the introduction, Talevich et al. assembled a large item set of value-descriptive phrases in a bottom-up manner, which constitute roughly 40% of the current item set. Thus, both similarities and differences between findings should be noted and explained. One notable difference is that the current investigation yielded far fewer constructs (five domains, 13 facets) than Talevich et al.'s (who found that as many as 44 clusters were conceptually interpretable). While several methodological differences can potentially explain this, we can first easily discard a couple. In additional online Results Section 5 at <https://osf.io/4utjg/>, we report that the five domains can be reproduced using items derived from Talevich et al. alone (though some facets cannot—social justice advocacy, social order). When we applied the same analytic technique as Talevich et al. (i.e., cluster analyses), a five-cluster solution again emerged (see the Robustness Analyses section), so neither differences in item set nor analytic strategy is responsible for any discrepancy. Instead, we suggest that it is our focus on *replicating* constructs across multiple samples and analytic techniques that is responsible for the discrepancy. Talevich et al. instead focused on *conceptual interpretability* in deciding upon a solution to focus upon. This difference in decision criteria led us to discard many conceptually interpretable (but empirically unreliable) constructs.

Beyond this, one can find clusters from Talevich et al.'s (2017) intermediate solutions (e.g., from their nine- or 14-cluster solutions) which correspond somewhat closely to the current facets (see Table 10). Interestingly, though, they sometimes load onto higher order clusters in very different fashions. For example, their morality/virtue, religion/spirituality, self-fulfillment, and openness to experience clusters largely correspond to the universal concern, religious devotion, personal growth, and sensation-seeking facets in the current investigation. Although these four facets loaded onto different domains here, these four clusters from Talevich et al. instead merged into a higher order “meaning” cluster.

The different tasks given to participants may explain this incomplete convergence. While we asked participants to rate their commitment to values, Talevich et al. (2017) asked participants to sort values into similar groups. Consistent with standard practice, Talevich et al.'s participants were allowed to determine the precise manner in which items were similar for themselves. Given this, it is likely that participants drew upon different types of “similarity” when completing this task. Many times, participants' sorting may have been based on the simple principle of *co-occurrence*—that is, does the same type of person seek to uphold both values? This would result in clusters such as morality/virtue, religion, self-fulfillment, and openness to experience, which could also be derived from PCAs of personal commitment ratings. Other times, sorting may have been based on other principles, such as *shared purpose*—do two goals serve as the means by which some larger end-state can be brought about? If so, this could result in two very different (and even mutually exclusive) means to the same ends loading on the same cluster. For example, religion and hedonism (i.e., openness to experience) may load together in their analyses, because they represent two very different routes to finding meaning in life (see Hicks & King, 2008). Future research could more systematically vary participants' task to test this explanation and determine how rating task influences the obtained structure.

Relevance to Understanding Mid-Level Goals

The current investigation was designed to provide a fuller understanding of the landscape of *values*, defined as superordinate goals that guide one across multiple contexts for significant periods of time. Given this, an important question is how the current framework relates to *mid-level goals*, which are more concrete, context-specific, and potentially short-lasting (Cantor et al., 1986; Emmons, 1986; Little, 2015).

Theory suggests that mid-level goals are often the *means* by which higher level values are upheld (Carver & Scheier, 2012; Powers, 2005; Vallacher & Wegner, 2011). If so, then the current taxonomy should provide a useful description of the *superordinate reasons* people pursue mid-level goals, but it would not necessarily describe the *defining concrete characteristics* of these mid-level goals. This has several important implications for future research. First, a taxonomy describing mid-level goals (e.g., similar to Reisz et al., 2013) may differ in several respects and focus more on concrete characteristics (e.g., school/work vs. health goals). Second, there may be no one-to-one mapping between the types of mid-level goals described in such a taxonomy and superordinate reasons for goal-pursuit described here. A person may seek to “exercise daily” (for example) to make themselves more attractive to others (i.e., social rank and prestige/popularity), to live a healthier and more fulfilling life (i.e., mastery and personal growth), or to be able to spend more time with their loved ones (i.e., interpersonal relatedness). If so, it is likely that other people (e.g., researchers or informants) may not always be able to accurately infer a person's values from a concrete description of their mid-level goals.

If the current framework is complete, however, it should summarize the *superordinate reasons* participants provide for pursuing many mid-level goals. This simple hypothesis opens up many fascinating directions for future research. For example, does the current

framework leave the reasons for a significant number of mid-level goals unaccounted for? If so, are there reoccurring reasons provided by participants (e.g., in open-ended, idiographic descriptions) that should be considered for incorporation into a values taxonomy? Or do participants indicate that there is no higher level values that these mid-level goals seek to uphold? Are they merely responses to temporary life circumstances, or is the participant themselves perhaps unaware of an implicit motive (Schultheiss & Kollner, 2021) driving the pursuit of this mid-level goal? Are other people (e.g., knowledgeable informants) sometimes able to identify such unconscious sources of motivation, even when participants are not (Vazire, 2010)? Future research should examine such possibilities.

Theoretical Explanations for the Structure of Values

We contend that the current findings provide a useful description of the structure of values and superordinate goal content, regardless of how it is theoretically explained. Nonetheless, it is useful to briefly consider possible theoretical explanations. One prominent question revolves around the *ultimate* causes of these values. The Fundamental Motives Framework (Kenrick et al., 2010; Neel et al., 2016) contends that many values highlighted here reflect motivational systems shaped directly by biological evolution. Thus, people in all cultures may become motivated to uphold these values, at least once they reach a relevant life stage and encounter relevant stimuli. This framework is well-equipped to explain several aspects of the current findings, including the domains of relatedness and social rank, as well as relatedness facets focused on general belonging, mate retention, and familial care (all of which reflect fundamental motives in this framework). However, it does not currently explain constructs such as cultural conventionality or universal justice. Moreover, it suggests that individual mastery (or self-actualization) only exists as a means to rank- or mate-attainment (Kenrick et al., 2010; Krems et al., 2017). This raises questions about why mastery is so robustly separate from social rank, as noted above.

This could suggest that at least some values are instead the product of *cultural evolution*. Theories of cultural evolution contend that cultural ideas and practices evolve, in a manner somewhat (although not perfectly) analogous to the biological evolution of genes (e.g., Henrich, 2017; Johnson & Earle, 2000). That is, cultural ideas are more likely to endure and spread when they are easy to remember, easy to transmit, and help individuals and cultural groups survive and reproduce. If so, cultural variations in the structure of values may in fact exist, with different values emerging at different points in different cultures' history for different purposes. For example, it has been argued the prestige came into existence early in human prehistory, specifically to facilitate the transmission of culturally valuable knowledge from experts to novices (Henrich & Gil-White, 2001). It has likewise been argued that religious devotion (in its modern form, focused on moralizing, all-powerful gods) came into existence later, specifically to facilitate cooperation between anonymous in-group members in extremely large cultural groups (Norenzayan et al., 2016). Values such as individualism and individual mastery may have emerged later, specifically to facilitate creativity and innovation (Schulz et al., 2019). Other, more nuanced frameworks also deserve further consideration (e.g., Sng et al., 2018; Varnum & Grossmann, 2017) but would require greater explanation than is warranted here.

Beyond the question of *ultimate causes*, other questions also loom. For example, goal contents theory focuses on the *consequences* of

pursuing different values for well-being (Bradshaw et al., 2023; Kasser & Ryan, 1996). It suggests that pursuing intrinsic aspirations that satisfy inborn needs (i.e., autonomy, relatedness, competence) will improve well-being, while pursuing extrinsic aspirations that fail to satisfy these needs should not. The current investigation suggests that three broad domains of values might be considered "intrinsic," as previously identified intrinsic aspirations load onto them. That is, personal growth, meaningful relationships, and community contribution loaded onto mastery, relatedness, and universal justice (respectively). By contrast, only one domain can clearly be identified as extrinsic, as all extrinsic aspirations (popularity, wealth, image) loaded onto social rank. An interesting question for future research is whether these relationships with well-being extend to all facets. For example, would social justice advocacy facilitate well-being or just universal concern? To date, there is little data on whether convention facilitates well-being (see Peck & Wilkowski, 2025, for a recent exception).

Beyond the WEIRD Cultural Context

The current investigation focused on the WEIRD cultural context of the United States. Although its results cannot be assumed to generalize to other cultures (especially non-Western or nonindustrialized cultures), it nonetheless represents an important first step. If any of the five domains identified here are reflections of motivational systems shaped by biological evolution, then they would presumably be present in all cultures. If any are instead the product of cultural evolution, then we might expect more variation across cultures. For example, cultures with less contact with the loose kinship structure of WEIRD cultures (Schulz et al., 2019) may not exhibit a separate individual mastery component.

Past research on Schwartz's (2012) values certainly suggests a great deal of consistency in the structure of many values. Nonetheless, a close examination of the evidence suggests there is some variation. For example, past research has found that "growth values" (universalism, self-direction) are more differentiated from "protection values" (power, security) in economically developed cultures (Fischer et al., 2011; Fontaine et al., 2008; Gouveia et al., 2014; see also Atari et al., 2023 for other findings of this type). Research using other types of item pools (e.g., lexical studies of value-descriptive words from the indigenous language) also yields more variability (see Wilkowski, Williamson, et al., 2025, for a review). As such, research using large, heterogeneous item pools (similar to the present study) in other cultural contexts would thus be highly useful.

Conclusion

Numerous prior models of values and superordinate goal content have been proposed. While they converge in some respects, they diverge in many others. This creates an obvious barrier to scientific progress. To overcome this, we conducted an integrated analysis of items derived from past influential measures and item pools. Results suggest that the structure of American values and superordinate goal content can be parsimoniously described in terms of five broad domains: individual mastery, social rank, interpersonal relatedness, cultural conventionality, and universal justice. Further analyses suggested that 13 more specific facets can be located within and between these domains, providing a more detailed

description. This framework should allow researchers studying different theories to more easily compare their results. Further research is certainly needed to understand how commitments to avoid impact this structure and to examine their generalizability across cultures. Nonetheless, the current investigation provides an important initial step by providing an integrated description of values and superordinate goal content in a WEIRD cultural context from which many prior models originated.

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Received January 17, 2025

Revision received July 28, 2025

Accepted July 30, 2025 ■