Status and the self: Socioeconomic inequality in core beliefs

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Abstract

In popular discourse, voices repeatedly claim that personal success is largely a matter of mindset. In psychological science, such claims correspond to self-related core beliefs—generalized self-representations. Yet the absence of a comprehensive framework has prevented systematic study of their links to socioeconomic inequality. Building on the CorBel model—an integrative taxonomy of 97 belief nuances derived via natural language processing—we analyzed two preregistered, SES-representative national samples (Germany: N = 435, UK: N = 266). Positive beliefs (e.g., competence, autonomy, trust) were associated with higher SES, whereas negative beliefs (e.g., insecurity, unworthiness, pessimism) were linked to lower SES. These associations replicated across SES indicators (education, income, wealth) and countries and explained up to 20% of variance in SES outcomes. This study provides the first systematic mapping of how socioeconomic inequalities are mirrored in individuals' innermost psychological constitution, identifying beliefs as potential targets for interventions with societal and policy relevance.

Keywords: Core beliefs, socioeconomic status, CorBel, self-related beliefs, social inequality, income, wealth

Research Transparency Statement

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Study One

Preregistration: The hypotheses, methods, and the analysis plan were preregistered (https://osf.io/596a3/?view_only=ebdb69dd9b9943118f1e664ac67d4302) prior to data collection. Deviations from the preregistration are described in Table S1 of the online supplement. Materials: All study materials are publicly available

(https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34). Data: Processed study data are publicly available (https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34). Due to ethical and legal constraints, the raw data cannot be shared. Specifically, the raw dataset included particularly sensitive personal data not part of this study (i.e., political orientation) or potentially identifying information (e.g., open-ended responses, postal codes). For details, see the README file on OSF. All data processing steps are fully documented in the shared R script. We are open to providing additional detail or limited confidential access upon request, in accordance with data protection regulations. Analysis scripts: All analysis scripts are publicly available (https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34).

Study Two

Preregistration: The hypotheses, methods, and the analysis plan were preregistered (https://osf.io/sv49e/?view_only=433a7080748b4b8eb578c92fe543af0c) prior to data collection. Materials: All study materials are publicly available (https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34). Data: All primary data are publicly available (https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34). Analysis scripts: All analysis scripts are publicly available (https://osf.io/mn3p7/?view_only=b44a5f545a364b56b8a7a59ea581ec34).

Author Contributions

Niklas Schulte: Conceptualization, Methodology, Formal Analysis, Investigation, Data Curation, Writing – Original Draft, Writing – Review & Editing, Visualization, Supervision, Project Administration, Funding Acquisition. **Matthias Ziegler:** Conceptualization,

Methodology, Writing – Review & Editing. **Patrick Mussel:** Conceptualization, Methodology, Resources, Writing – Original Draft, Writing – Review & Editing, Visualization.

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The Association of Core Beliefs and Socioeconomic Status

Socio-economic status has a profound impact on individual life outcomes, including health [1,2], cognitive and socioemotional development [3], academic achievement [4], and mortality [5]. These correlations are commonly attributed to a lack of external resources, such as financial possibilities or nutrition; access to services, such as medical care; social influences, such as parenting; habits, such as health-related behavior; or environmental factors, such as complexity and autonomy of the work environment [6]. In the present study, we investigate the role of psychological factors associated with socioeconomic status. We propose that self-related core beliefs—generalized mental representations that individuals hold of themselves within their social context—covary with socioeconomic status as they are likely shaped by individuals' past experiences and social environments and, in turn, may influence how individuals navigate opportunities and challenges in life [7]. To this end, we draw on a novel, integrative model of self-related core beliefs and examine their associations with multiple indicators of socioeconomic status across two national samples. Our results offer a new perspective on basic mental representations associated with socioeconomic status with the ultimate goal of identifying variables that have the potential to explain underlying mechanisms between socioeconomic inequalities and important life outcomes. These insights may also serve as a starting point for interventions providing a key to the emancipation of individuals from their socio-economic living conditions.

Self-related core beliefs can be defined as basic, generalized, and relatively stable cognitions that reflect what individuals think about themselves within their social context [8]. For example, individuals might hold beliefs about themselves concerning their capabilities, their ability to cope with challenges, how well they are accepted by others, or how they

generally value themselves. Thus, such beliefs can be described as mental representations that reflect knowledge that individuals possess about themselves.

The literature on core beliefs regarding content and structure is scattered and disconnected [9]. Approaches have been made independently in different subdisciplines, including, social, personality, political, developmental, or clinical psychology. Depending on area and objective, these approaches differ largely regarding kind of proposed beliefs, assumed latent structure, and operationalization. Recently, Mussel [8] introduced the CorBel model, a structural, network-based model that integrates former approaches in the domain of self-related core beliefs. The model is based on a review of the literature, revealing 768 unique core beliefs and 248 dimensions that were proposed across 46 sources. Using large language models from natural language processing, these self-related core beliefs were reduced to 97 nuances. An empirical study on the latent structure of the nuances revealed a complex hierarchical model, with 20 unipolar facets on the lower level. On the highest level, it has a two-dimensional structure with the dimensions of valence (positive, negative) and direction (approach, withdrawal), which give rise to four quadrants of adaptive (positively approaching) vs. maladaptive (negatively withdrawing) and excessive (negatively approaching) versus balanced (positively withdrawing) beliefs (see also Figure 1). These were further differentiated according to domain (agency, self-esteem, communion) on an intermediate level of complexity.

Socioeconomic status, in turn, refers to the social status and prestige of individuals [10] and is often indicated by educational attainment, occupational status, or income [11]. Relations between socioeconomic status and self-related core beliefs may be assumed both on theoretical as well as empirical ground. From a theoretical perspective, factors that shape the development of self-related core beliefs are also known to be associated with socioeconomic

status. First, clinical approaches emphasize that core beliefs are shaped by negative experiences early in life, mostly due to the frustration of unmet core emotional needs and due to negative interactions with primary caregivers [12-15]. Similarly, attachment theory stresses the role of parental behavior on attachment-related beliefs, rooted in the interaction between the child's temperament and adversity in their early environment [14]. Households from low compared to high socioeconomic status are characterized by lack of financial and time resources and low educational level of caregivers which might lead to elevated stress level and unmet needs. Second, as Bandura's [16] social cognitive theory suggests, beliefs in one's own efficacy develop through experiences of mastery and reinforcement. Affluent environments rich in opportunities and support are more likely to nurture high self-efficacy, while disadvantaged environments marked by repeated failure or limited positive feedback may erode such beliefs [17]. Third, self-related core beliefs may form through appraisals on how individuals imagine that they appear to others; social comparisons with groups or individuals; self-attributions from observing one's own behavior and actions; or cultural background [17-20]. Socioeconomic status is a major property of the social and cultural environment and may thus impact core beliefs through self-appraisal and observational learning. In sum, given that socioeconomic status gives rise to differences in environmental properties and such environmental properties shape self-related core beliefs, an influence of socioeconomic status on self-related beliefs may be expected [21,22].

From an empirical perspective, there is some preliminary evidence for a relation between socioeconomic status and self-related core beliefs. Higher compared to lower levels of socioeconomic status have been found to be positively associated with optimism [23], self-esteem [24], self-efficacy [25-27], and sense of control [21,28]. In a longitudinal study, Renger, et al. [29] found an effect of levels of income in changes in self-regard, but not vice versa. Regarding

negative self-related core beliefs, Leyva and Hill [30] report that low childhood socioeconomic status lead to unpredictability schemas which, in their study, correlate with problematic eating behavior. Furthermore, socioeconomic status, according to level of education, seems to influence beliefs of social isolation, vulnerability, emotional inhibition, and abandonment fear [31]. Thus, there is a general pattern that high compared to low levels in socioeconomic status correlates with higher levels in positively valenced and lower levels in negatively valenced self-related core beliefs.

In the present study, we investigate the correlation between socioeconomic status and self-related core beliefs according to the integrative CorBel-model [8]. This allows for a comparison of the correlational pattern across a broad range of beliefs. According to our review of the literature, we formulate the following hypotheses:

H1: Positive core beliefs are positively associated with socioeconomic status variables.

H2: Negative core beliefs are negatively associated with socioeconomic status variables.

In addition, we investigate exploratorily whether socioeconomic status is differentially associated with core beliefs on the level of the 20 facets. These analyses allow the identification of specific core beliefs as potential targets for interventions. Furthermore, we report results from two studies conducted in two different countries and languages to investigate generalizability of our results.

Results Study 1 (German Sample)

Table 1 displays bivariate correlations between core beliefs (rows) and the socioeconomic status indicator variables (columns; for confidence intervals and exact *p* values, see Table S4 of the online supplement). Consistent with our hypotheses, aggregated

positive beliefs were positively correlated with overall SES (r = .22, p < .001, 95% CI [.13, .31]), while aggregated negative beliefs showed a negative association (r = –.24, p < .001, 95% CI [-.33, -.15]). Similar patterns emerged at the facet level (see also Figure 1): Most positive belief facets (e.g., *Autonomous*, *Competent*; see upper half of Table 1 and Figure 1) were positively associated with SES, whereas most negative belief facets (e.g., *Insecure*, *Unworthy*; see lower half of Table 1 and Figure 1) were negatively related.

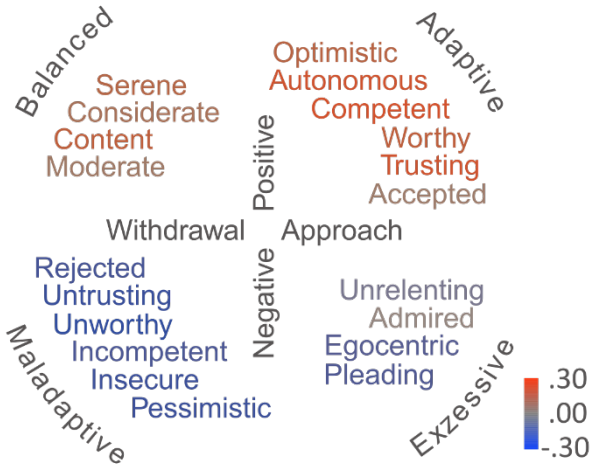

Figure 1:
The CorBel model. The facets are depicted as a circumplex according to the two dimensions valence (positive vs. negative) and direction (approach vs. withdrawal), giving rise to the four quadrants adaptive vs maladaptive and excessive vs. balanced. Correlations of facets with socioeconomic status according to results from Study 1 are depicted on a heat scale from -.30 (blue) to .30 (red).

Effect sizes at the facet level ranged up to $|r|$ = .26, which is substantial given the multidetermined nature of both SES and core beliefs. Regarding specific SES indicators, education, income, and wealth were consistently associated with aggregated beliefs and multiple facets in the expected direction. Occupational prestige, however, showed no significant correlations. SES of the parent generation, as captured by mother's and father's education, was only weakly associated with participants' beliefs; small effects emerged primarily for mother's education.

Table 1

Correlation of Core Beliefs and SES Variables in the German Sample

	SES	Edu-cation	Prestige	Income	Wealth	Edu. Mother	Edu. Father
Positive beliefs	.22***	.18***	.09	.18**	.12*	-.06	.04
Accepted	.05	.05	-.03	-.01	.05	.01	.06
Autonomous	.22***	.16**	.14	.23***	.11	-.08	.05
Competent	.23***	.26***	.12	.18**	.07	-.07	.08
Considerate	.08	.09	.03	.01	.06	-.04	-.01
Content	.16**	.10	.12	.17**	.12*	-.01	.01
Moderate	.06	.01	-.09	.08	.04	-.13*	-.09
Optimistic	.14**	.14**	.15	.14*	.04	.05	.08
Serene	.13**	.07	-.03	.13*	.12*	-.07	.03
Trusting	.22***	.18***	.07	.15**	.13*	-.06	.01
Worthy	.16**	.15**	.06	.08	.09	-.06	.03
Negative beliefs	-.24***	-.18***	.03	-.21***	-.21***	.13*	.02
Admired	.02	.01	.02	.04	.01	-.06	-.01
Egocentric	-.13**	-.14**	.03	-.05	-.15**	.00	.05
Incompetent	-.16**	-.16**	-.01	-.15**	-.05	.12	.02
Insecure	-.22***	-.16**	-.03	-.24***	-.16**	.15*	-.03
Pessimistic	-.22***	-.20***	-.09	-.15**	-.15**	-.02	-.10
Pleading	-.15**	-.03	.07	-.19**	-.20***	.18**	.06
Rejected	-.18***	-.11*	-.01	-.18**	-.15**	.09	.01
Unrelenting	-.04	-.06	.16	.04	-.03	.02	.02
Untrusting	-.23***	-.15**	-.03	-.19**	-.22***	.02	-.02
Unworthy	-.26***	-.20***	-.00	-.22***	-.22***	.15*	.02

Note. SES = overall socioeconomic status, Edu. = education. Within each socio-economic status variable, *p*-values are Benjamini-Hochberg adjusted. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

To account for the potential confounding influence of demographic variables, we repeated the correlation analyses while controlling for age, gender, and migration background. The pattern of results remained virtually unchanged, suggesting that the associations are robust across sociodemographic subgroups (see Table S5 in the online supplement for partial correlations). For correlations of all 97 belief nuances of the CorBel model as well as higher order dimensions, see Table S6 of the online supplement. This table also provides descriptions of each CorBel model component (facets, nuances, etc.).

Table 2
Regression Model Statistics for Germany

Dependent variable	R^2	R^2_{adj}	*F*	*df1*	*df2*	*p*
Socioeconomic status (overall)	0.194	0.151	4.48	22.00	409.00	< .001
Education	0.155	0.109	3.33	22.00	398.00	< .001
Occupational prestige	0.109	0.042	1.62	22.00	290.00	0.041
Income	0.184	0.132	3.49	22.00	340.00	< .001
Wealth	0.165	0.114	3.22	22.00	358.00	< .001
Education mother	0.122	0.071	2.39	22.00	378.00	< .001
Education father	0.073	0.016	1.28	22.00	361.00	0.178

Note. R^2 = proportion of variance explained. Adjusted R^2 accounts for model complexity. *F*-statistic and *p*-value indicate model significance.

Given the substantial intercorrelations among the core belief facets, we acknowledge that the previously reported bivariate correlations likely reflect overlapping variance rather than unique effects. To estimate the proportion of variance in socioeconomic status (SES) indicators that can be explained jointly by the belief facets while accounting for this overlap, we conducted multiple regression analyses. The resulting coefficients of determination (R^2) indicate how much variance in SES can be predicted by the set of core beliefs without double-counting shared variance. The resulting models explained between 7% and 19% of the variance in SES variables (see Table 2). The best prediction was observed for the overall SES index (R^2 = .19), followed by income (R^2 = .18) and wealth (R^2 = .17). Due to multicollinearity, the individual regression weights (Table S7 of the online supplement) are unstable and should be interpreted with great caution; accordingly, we refrain from discussing them.

Results Study 2 (UK Sample)

Table 3 presents the bivariate correlations between core belief dimensions and indicators of socioeconomic status (SES) in the UK sample (for confidence intervals and exact *p* values, see Table S8 in the online supplement). As hypothesized, aggregated positive beliefs were positively associated with overall SES (r = .28, 95% CI [.17, .39], $p < .001$), while negative beliefs were negatively related (r = –.19, 95% CI [-.31, -.07], $p < .001$). These associations replicate the overall pattern observed in the German sample and support the robustness of the relationship across national contexts.

Table 3

Correlation of Core Beliefs and SES Variables in the UK Sample

	SES	Edu-cation	Prestige	Income	Wealth	Edu. Mother	Edu. Father
Positive beliefs	.28***	.23**	.07	.20**	.17*	.18*	.10
Accepted	.21**	.19**	.03	.16*	.13	.19*	.15
Autonomous	.32***	.23**	.10	.24**	.18*	.14	.06
Competent	.27***	.22**	.09	.19*	.15	.18*	.13
Considerate	.19**	.21**	.08	.08	.11	.05	.03
Content	.26***	.19**	.05	.22**	.13	.17*	.10
Moderate	.12	.09	-.01	.07	.13	.09	.02
Optimistic	.31***	.30***	.11	.21**	.10	.22*	.15
Serene	.15*	.13*	-.02	.11	.11	.12	.01
Trusting	.18**	.06	.07	.14*	.17*	.13	.01
Worthy	.25***	.20**	.04	.16*	.17*	.14	.08
Negative beliefs	-.19**	-.14*	.03	-.10	-.22**	-.07	-.02
Admired	.20**	.18**	.12	.15*	.01	.20*	.23*
Egocentric	-.05	-.06	.01	.00	-.08	-.01	.01
Incompetent	-.24***	-.17*	-.02	-.14*	-.20**	-.10	-.07
Insecure	-.23***	-.17*	.01	-.16*	-.21**	-.08	-.00
Pessimistic	-.29***	-.26***	-.11	-.14*	-.16*	-.15	-.10
Pleading	-.01	-.04	.13	.02	-.09	.06	.07
Rejected	-.21**	-.13*	.02	-.17*	-.19*	-.14	-.09
Unrelenting	.02	.03	.08	.10	-.14	.06	.07
Untrusting	-.19**	-.08	-.01	-.11	-.26**	-.08	-.01
Unworthy	-.24***	-.18**	.00	-.13	-.24**	-.13	-.09

Note. SES = socioeconomic status, Edu. = education. Within each socio-economic status variable, *p* values are Benjamini-Hochberg adjusted. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

At the facet level, most positive belief facets (e.g., *Autonomous*, *Optimistic*, *Competent*) were significantly associated with higher SES. In particular, beliefs relating to

competence and agency again showed the strongest and most consistent associations, with correlations up to $|r| = .32$ (*Autonomous*). In contrast, negative belief facets such as *Incompetent*, *Insecure*, and *Unworthy* showed significant negative correlations with SES indicators. One exception from this rule is the *Admired* facet, which shows positive correlations with socioeconomic status and its indicators. Note that compared with other facets of the CorBel model, the valence of *Admired* is less clear on a conceptual and empirical level (see intercorrelations with other facets). The full correlation matrix including higher-order core belief dimensions and nuances can be found in Table S9 of the online supplement.

When examining specific SES indicators, education, income, and wealth were significantly correlates with several core beliefs, whereas occupational prestige did not. Parental education showed only few effects and these were not consistent between the German and the UK sample.

To control for potential demographic confounders, partial correlations adjusting for age, gender, and migration background were computed. The pattern of results remained largely stable (see Table S5 in the online supplement), indicating that the associations are not attributable to these sociodemographic variables.

To further explore the cumulative predictive contribution of belief facets to SES, we conducted multiple regression analyses using belief facets as predictors and SES indicators as dependent variables. The core belief facets explained significant amounts of variance in the overall SES ($R^2 = .18$) and the indicators education ($R^2 = .20$) and income ($R^2 = .14$; see Table 4). As in Study 1, we refrain from interpreting individual regression weights due to the substantial multicollinearity among predictors (see analysis section for details). Full regression coefficients are available in Table S10 of the online supplement.

Table 4
Regression Model Statistics for UK

Dependent variable	R^2	R^2_{adj}	*F*	*df1*	*df2*	*p*
Socioeconomic status	0.183	0.104	2.31	22.00	227.00	0.001
Education	0.196	0.118	2.51	22.00	227.00	< .001
Occupational prestige	0.100	-0.003	0.97	22.00	191.00	0.508
Income	0.144	0.060	1.71	22.00	223.00	0.028
Wealth	0.120	0.026	1.27	22.00	206.00	0.191
Education mother	0.123	0.032	1.36	22.00	214.00	0.137
Education father	0.155	0.055	1.55	22.00	186.00	0.062

Note. R^2 = proportion of variance explained. Adjusted R^2 accounts for model complexity. *F*-statistic and *p*-value indicate model significance. Predictors are 20 CorBel facets.

General Discussion

Results of the present study show that socio-economic living conditions are reflected in individual's innermost psychological constitution. Across two studies, our hypothesis was confirmed as higher compared to lower levels of socioeconomic status was positively correlated with positive self-related core beliefs and negatively with negative self-related core beliefs.

Our study utilized a novel, integrative model of self-related core beliefs which allowed to investigate a broad range of beliefs. Across studies and socioeconomic status criteria, we found consistent correlations to self-related core beliefs, especially in the domain of agency (*Optimistic* versus *Pessimistic*; *Autonomous* versus *Insecure*) and self-worth (*Worthy* versus *Unworthy*; *Competent* versus *Incompetent*), with correlation coefficients ranging between r = .20 and r = .25. These beliefs have a clear reference to features characterizing individuals with high compared to low levels of socioeconomic status, such as goal-setting, independence, knowledge acquisition, and success. Interestingly, self-related beliefs from the domain of communion (*Accepted* versus *Rejected*; *Trusting* versus *Untrusting*) were also

substantially related with socioeconomic status criteria, albeit slightly weaker, which might reflect higher compared to lower levels of social integration accompanying high compared to low socioeconomic status. The similar pattern across quite different beliefs can be interpreted in terms of Brunswik symmetry [32], such that a broad variable like socioeconomic status affects experiences of individuals in a broad range of situations, reflected in mental representations across domains. Additionally, some of the correlations between core belief facets were quite high, which might have also contributed to the overall pattern. However, there were also exceptions: Beliefs characterized as excessive (*Unrelenting*; *Admired*; *Egocentric*; *Pleading*) as compared to balanced (*Moderate*; *Considerate*; *Serene*) showed only weak relations with socioeconomic status.

We employed a cross-country design to investigate whether results generalize across countries. While there were a few differences on the level of core belief facets (e.g., for beliefs of being *Admired* and *Accepted*), the overall pattern across the two studies was very similar. Additionally, we employed different strategies for recruiting participants. In Study 1, we invested a large amount of effort to capture a broad range of socioeconomic status backgrounds. We contacted individuals via direct outreach, distribution of recruitment letters and flyers in targeted areas which reflect social disparities based on unemployment rates, welfare dependency, and child poverty risk. Contrary, in Study 2, we recruited participants via an online recruitment platform. Despite these different strategies, effect sizes were similar. Additionally, as a strength of the present study, socioeconomic status was operationalized via several indicators, including education, occupational prestige, income, and wealth.

The present studies employed a cross-sectional design, appropriate to discover bivariate associations between socioeconomic status and self-related core beliefs. Our hypotheses were deduced according to theorizing that such relations emerge due to

different environmental properties that individuals from low compared to high socioeconomic status are subjected to, such as resources, social support, and educational, academic, and work opportunities [21,22]. Empirical evidence shows that these factors have a profound influence on a range of important life outcomes [1]; some preliminary evidence also suggests that socioeconomic status impacts self-related beliefs, such as self-regard [29]. However, it is important to stress that a reverse mechanism is also possible: Given that self-related core beliefs impact how we perceive and evaluate events, what kind of goals we set, and how we pursue our goals, self-related core beliefs may also influence socioeconomic status (e.g., the level of education someone pursued and achieved). Moreover, reciprocal effects between socioeconomic status and core beliefs might lead to up- or downwards spiral effects. Furthermore, type of self-related core belief might moderate the direction of the influence (e.g., competence-related beliefs might influence socioeconomic status, whereas the latter influences beliefs in autonomy or rejection). Longitudinal and experimental studies are needed to disentangle such effects.

The results of the present study suggest that self-related core beliefs are a promising variable to elucidate mechanisms underlying the relation between socioeconomic status and important life outcomes, such as health or academic achievement. As such, it can be hypothesized that socioeconomic status shapes self-related core beliefs, which influence goal setting and behavior, ultimately impact life outcomes. Given that these underlying mechanisms are better understood, core beliefs might constitute a promising variable for interventions. Despite often been stable across decades, research on behavioral cognitive therapy has shown that beliefs constitute a candidate variable for initiating change [33]. Transferred to the context of socioeconomic status, intervention strategies which aim at modifying maladaptive core beliefs might constitute a promising approach for breaking the

assumed downwards spiral effects. Ultimately, such interventions may disentangle the prevailing link between socioeconomic status and important life outcomes, thus providing an avenue to free individuals from their prevailing socio-economic living conditions.

Method

Study 1 (Germany)

Sample

Participants were recruited primarily in the Berlin metropolitan area through a multi-method approach to ensure a diverse representation across socioeconomic backgrounds. Recruitment areas were selected using the Social City Development Monitoring index from Berlin's Senate Department for Urban Development[1], which identifies small-area social disparities based on unemployment rates, welfare dependency, and child poverty risk. To capture a broad range of socioeconomic status (SES) backgrounds, ten areas with high SES indices and ten areas with low SES indices were randomly selected. Recruitment strategies included direct outreach, distribution of recruitment letters and flyers in targeted areas, and a supplementary social media campaign (Instagram, LinkedIn, and WhatsApp) to reach middle SES participants. As incentives, participants were offered individualized feedback on their core beliefs and had the opportunity to enter a raffle for one of ten € 50 gift vouchers. The majority of participants were recruited through letters (62%), followed by personal outreach by the research team (13%), social media (11%), and flyers (6%), while 8% reported "Other" as their recruitment source. As the recruitment was carried out by participants of a

[1] https://www.berlin.de/sen/sbw/stadtdaten/stadtwissen/monitoring-soziale-stadtentwicklung/bericht-2021/#Erl%C3%A4uterungen

university seminar, a fixed date (3 July 2023) was set as the termination criterion for the sample collection in accordance with the pre-registration.

The initial sample comprised 467 participants. Eight participants were excluded due to non-consent for data processing, and an additional 24 were excluded for failing two instructed response items, resulting in a final sample of $N = 435$. This sample size is sufficient to detect effects of $r \geq .14$ with 80% power (two-tailed, $\alpha = .05$).

In our sample, 61% identified as female, 38% as male, and <1% as diverse. The mean age was 45.03 years ($SD = 17.25$) and 91% were born in Germany—the country in which the study took place—while 21% were immigrants themselves or were children of at least one immigrant parent. At the time of data collection, 61% were employed, 16% were students, 13% were retired and 10% did not pursue paid employment for other reasons (unemployment, caregiving, etc.). The highest educational levels were: a college degree (62%), a college entrance degree and a completed vocational training (10%), a college entrance degree (11%), a lower secondary school degree and a vocational training (14%), or anything below (3%). Participants reported a median net monthly income of € 2,400 and a median net household wealth of € 75,000.

Design

The study was conducted online. After giving informed consent, participants answered some demographic questions (e.g., age, education and occupation) followed by the belief items. At the end, they also provided information on health and political attitudes (not part of this manuscript) and on their income and assets.

Measures

Core Beliefs. We used the 97-item version of the CorBel scale [34] which measures 97 individual belief nuances of the CorBel model on a seven-point rating scale with anchors for 1 (*strongly disagree*), 4 (*partly/partly*), and 7 (*strongly agree*). The CorBel nuances were aggregated to 20 unipolar facets and, on the highest level, to positive and negative core beliefs according to valence.

Socioeconomic Status. This study conceptualizes SES as a formative construct with the indicator variables education, occupational prestige, income, and wealth. Unless otherwise mentioned, we used the standard questionnaire for socio-demographic variables suggested by the German Data Forum to collect demographic data [35].

***Education*.** Participants indicated their highest school degree and professional training degree. Degrees were coded according to the Comparative Analyses of Social Mobility in Industrial Nations CASMIN [36,37]. The CASMIN classification makes educational qualifications comparable within and across national educational systems in an internationally accepted way.

Occupational Prestige. We asked participants for their job, a task description of that job and optionally for a formal job title. Based on this information, we assigned job codes according to the International Standard Classification of Occupations ISCO-08 [38]. To derive corresponding prestige levels, we converted the ISCO-08 codes into Treiman's Standard International Occupational Scale (SIOP) scores [39,40] using the conversion keys provided by Ganzeboom [41]. Occupational prestige reflects the reputation ascribed to a professional activity or position [40].

Income. We measured personal net monthly income after deductions for taxes and social security contributions. Respondents were instructed to calculate this amount as the

sum of income from primary and secondary employment, pension payments, government benefits, and maintenance payments received. In a conditionally stepwise approach, participants were initially asked to report an exact income amount. If respondents did not provide a precise figure, they were subsequently presented with a list of income intervals and asked to select the most suitable range [42]. In such cases, the midpoint of the selected interval was used as an income estimate. We treated monthly incomes below €500 (n = 15) and above €25,000 (n = 9) as missing values because extremely low or extremely high incomes may indicate atypical life situations or inaccurate reporting, which could introduce systematic bias into the analysis.

Wealth. We asked participants for the household net wealth (i.e., worth of all financial and tangible assets, including owner-occupied and rented residential property after the deduction of debt). Participants selected one of nine wealth intervals [43]. Again, we used the mean of the interval limits as an estimate of wealth.

Overall SES. As a measure of overall SES, we calculated the mean of the z-standardized measures of education, occupational prestige, income, and wealth. Analysis using the factor loadings of these variable on a joint latent SES variable as weights for calculating a SES score yield highly similar results. For the inter-correlations of all SES indicator variables, see Table S2 of the online supplement.

Parents' education. As an indicator of the parent generation's SES, we asked about the highest educational qualifications of the family members the respondents had grown up with, i.e., the (biological, adoptive, or step) mother and father. The questions and coding procedure was the same as for the participants' education.

For distributions of all study variables, see Figure S1 in the online supplement.

Analysis

To examine the relationships between socioeconomic status variables and core beliefs, we first calculated bivariate correlations to provide an overview of the direct associations between these variables. Where we applied significance tests to multiple correlations (e.g., at the facet or nuance level), we used Benjamini-Hochberg-adjusted *p*-values to control the false discovery rate.

However, the correlations likely overestimate the total effects of individual beliefs, because many CorBel facets are interrelated (Table S3 of the online supplement) and therefore share variance in their associations with SES. To account for such overlap, we additionally conducted multiple regression analyses on an exploratory basis. These models correct for double-counting shared variance and provide an estimate of the beliefs' joint explanatory power, reflected in the models' R^2 values. In contrast, their individual regression coefficients require very cautious interpretation: They represent only the residual portion of each belief facet after partialling out all variance shared with the other facets, which means that substantive construct variance is statistically removed [44,45]. Note that many facets reflect distinct but systematically associated aspects of self-related beliefs and the residualization produces coefficients that do not necessarily correspond to the constructs as they naturally occur. Moreover, multicollinearity among the predictors renders these coefficients unstable and even small changes in the data can shift their magnitude or direction. Finally, statistical side effects such as suppression [46] may further amplify or attenuate some coefficients. For transparency, we report the full regression weights in the online supplement, but any interpretation should take these limitations into account. Our primary emphasis is therefore

on the R^2 values as a robust indicator of the collective relationship between core beliefs and SES. All our hypotheses tests are two-sided.

Study 2 (UK)

The study design of Study 1 and 2 is very similar and we will describe differences in the following.

Sample

We recruited our participants via the online recruitment platform *Prolific*, paid £6 for a 40-minute study, and sampled only participants located in the UK. Using prescreeners, we draw a sample representative of the UK net personal income distribution. Data collection took place in February 2024.

Of the initial sample of $N = 281$, $n = 15$ did not consent, and $n = 16$ participants did not respond correctly to at least one of two instructed response items or one of two captchas (in five of these cases, participants broke up earlier). As an additional check of data quality, we compared the age data from our study with the age data provided by the respondents in a survey conducted by the panel provider in the past. The agreement was very high ($r = .99$), indicating a high data quality. The final sample size of $N = 266$ is sufficient to detect effects of $r \geq .17$ with 80% power (two-tailed, $\alpha = .05$).

In our sample, 60% were female, 39% male and 1% identified as diverse. The mean age was 42.70 years ($SD = 13.08$) and 83% were born in the UK, whereas 25% were either born abroad themselves or had at least one parent born abroad. In the sample, 84% were employed, <1% were students, 8% were retired and 6% were not employed for other reasons (unemployment, caregiving, etc.). The highest educational qualifications were measured based on academic qualifications and National Vocational Qualifications (NVQ) equivalents.

In our sample, 12% had a master's degree or higher, 27% a bachelor's degree and a level 4 or 5 NVQs (higher level apprenticeships), 17% an A-level and level 3 NVQs (advanced apprenticeships), and 44% level 3 NVQs or below. Participants reported a median net monthly income of £2,000 and a median net household wealth of £150,000.

Measures

All variables measured in Study 1 were part of Study 2 as well. For the socio-demographic variables, we translated the items from Study 1 to ensure consistency between both studies were possible. To adopt the measurement of education to the UK educational system, we used items from the second cycle of the Survey of Adult Skills (PIAAC) provided by Richard Brind (personal communications). To yield CASMIN codes as in Study 1, we followed the suggestions by Schneider [47]. In the UK data, we found no need to trim the income variable. All other socioeconomic variables were surveyed and processed as in Study 1.

To be able to check the reliability of the core belief measures, we used the long version of the CorBel scale [34] which measures the 97 individual nuances with three items each (one of which is part of the short version used in Study 1). The average Cronbach's α was .77. As results did not differ meaningfully between the short and long versions, and the long version offers superior psychometric quality, all analyses are based on the long version.

Analyses

The analysis for Study 2 were identical with those from Study 1.

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