

Cynical Beliefs About Human Nature and Income: Longitudinal and Cross-Cultural Analyses

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Based on the existing literature on worldview beliefs, cynical hostility, and Machiavellian cynicism, we suggest that holding cynical beliefs about human nature can be detrimental for individuals' income. Cynical individuals are more likely to avoid cooperation and trust or to overinvest in monitoring, control, and other means of protection from potential exploitation. As a result, they are more likely to forgo valuable opportunities for cooperation and consequently less likely to reap the benefits of joint efforts and mutual help compared with their less cynical counterparts. Studies 1 and 2, using nationally representative longitudinal surveys of the American population, show that individuals who endorsed cynical beliefs about human nature at baseline earned comparatively lower incomes 9 (Study 1) and 2 (Study 2) years later. In Study 3, applying a multilevel model of change to a nationally representative panel study of the German population, we show that cynical beliefs at baseline undermined an income increase in the course of the following 9 years. In Study 4, the negative effect of cynical beliefs on income proved to be independent of individual differences in the Big Five personality dimensions. Study 5 provided the first tentative evidence of the hypothesized mechanism underlying this effect. Using survey data from 41 countries, it revealed that the negative effect of cynical beliefs on income is alleviated in sociocultural contexts with low levels of prosocial behavior, high homicide rates and high overall societal cynicism levels. Holding cynical beliefs about others has negative economic outcomes unless such beliefs hold true.

Keywords: beliefs about human nature, cynical hostility, Machiavellian cynicism, income, social cynicism

“Men of integrity, by their very existence, rekindle the belief that as a people we can live above the level of moral squalor. We need that belief; a cynical community is a corrupt community.”

—John W. Gardner, author and politician

“The more cynical you become, the better off you'll be.”

—Matt LeBlanc, actor

Are most people good, honest, and trustworthy or are they egoistic, deceitful, and evil? Individuals, cultures, and even generations seem to differ in their default responses to this question. Some endorse a negative cynical, others a positive idealist view of human nature (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004; Leung et al., 2002; Twenge, Campbell, & Carter, 2014). However, which consequences do cynical beliefs bear for the individuals holding them? Although existing research showed that cynical beliefs undermine psychological and physical health (e.g., Smith, Glazer, Ruiz, & Gallo, 2004), the impact of cynical beliefs on individuals' economic success remains largely unexplored (e.g., Haukkala, 2002). On the one hand, enhanced cautiousness associated with cynical beliefs about human nature might prevent finan-

cial losses because of deception and fraud. On the other hand, individuals who regard most other people as dishonest and untrustworthy are likely to miss valuable opportunities for cooperation and forgo the economic benefits that joint efforts and mutual help may convey. In the present research, we examine the prospective effects of cynical beliefs about human nature on individuals' income using nationally representative panel data and cross-sectional surveys from the United States and Germany (Studies 1–4). Moreover, we present the first insights into the underlying mechanism of this effect by exploring the associations between cynicism and income cross-culturally (Study 5). Particularly, we investigate whether the degree to which individuals' cynical beliefs about other people further or undermine economic success is determined by whether these beliefs appear to be justified within the respective sociocultural context.

Cynical Beliefs About Human Nature

The question of the benevolence versus malevolence of human nature has long captured the attention of philosophers. For example, Thomas Hobbes highlighted hostility and self-interest as defining features of human nature, suggesting that people constantly live in a state of war against each other (Hobbes, 1651/2009). In contrast, Jean-Jacques Rousseau believed that humans are innately good and inclined to live in harmony (Rousseau, 1755/1992). Regardless of whether human nature is actually good or evil, it is an intriguing question of how individuals differ in their beliefs about it. This question has attracted attention of both psychologists and social scientists alike. The anthropologist Florence Rockwood Kluckhohn (1950) suggested that whether people regard human

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nature as evil or good represents one of the core dimensions of cultural orientation. Around the same time, Rosenberg (1956, 1957) presented the “faith in people scale,” constructed to reflect individuals’ attitudes toward human nature and, later on, used as a measure of cynical worldview beliefs (Crandall & Cohen, 1994) and trust (Knack & Keefer, 1997). Wrightsman (1964) extended Rosenberg’s approach by developing a comprehensive set of six dimensions on which human nature can be judged, two of which were trustworthiness and altruism. Most recently, Leung et al. (2002) coined the concept of “social cynicism” as one of five social axioms—generalized beliefs about the world and people. In addition to mistrust of social institutions and a generally negative view of life, a negative belief about human nature is a core element of social cynicism.

Individual differences in the endorsement of a cynical view of human nature are also a defining feature of cynical hostility, also known as cynical distrust (Cook & Medley, 1954; Costa, Zonderman, McCrae, & Williams, 1986; Greenglass & Julkunen, 1989). Cynical hostility refers to negative beliefs about and appraisals of the intentions and motives of other people. Likewise, the personality trait Machiavellianism, coined by Christie and Geis (1970) to describe a cold and manipulative personality, encompasses cynical views of others’ intentions and motives as one of its central elements, as reflected in the facet of Machiavellian cynicism (Christie & Geis, 1970; Dahling, Whitaker, & Levy, 2009).

As this brief overview suggests, individual differences in cynical beliefs about human nature have been studied across many different disciplines. Following Leung et al. (2002), we conceptualize cynical beliefs about human nature as a dispositional construct, which (like other beliefs, e.g., just-world belief; Lerner & Miller, 1978) reflects individual differences in the core evaluations of reality, the world, and people. Following Rokeach’s (1973) account of beliefs and values, cynical beliefs about human nature represent an evaluative type of belief, as they describe humans in terms of good versus evil. A distinctive feature of this construct is its cognitive focus; it involves a set of beliefs only, void of affective and behavioral elements. Following the insights from the research on beliefs and values (Goodwin, Polek, & Bardi, 2012; Leung, Ip, & Leung, 2010), we consider cynical beliefs a relatively stable dimension of individual differences.¹ While building upon and integrating the previous findings within different research streams involving cynical hostility, Machiavellian cynicism, social cynicism, and trust, our research focuses on the element that these concepts have in common—cynical beliefs about human nature—that has rarely been examined alone.

The Consequences of Idealist Versus Cynical Beliefs About Human Nature

Existing research has shown cynical beliefs to be related to many negative outcomes across different spheres of life. For example, “Machiavellian cynics” and individuals scoring high on cynical distrust are less likely to report positive mood (Egan, Chan, & Shorter, 2014) and are more prone to depression (Haukkala & Uutela, 2000) than their less cynical counterparts. Additionally, cross-sectional and longitudinal studies have shown cynical distrust to be a reliable predictor of negative physical health outcomes, including obesity and insulin resistance (Bunde & Suls, 2006), coronary heart disease (Nelson, Palmer, & Pedersen, 2004;

Niaura et al., 2002; Smith, 1992; Smith et al., 2004), dementia (Neuvonen et al., 2014), and increased mortality (Everson et al., 1997; Miller, Smith, Turner, Guisjarro, & Hallett, 1996). On an interpersonal level, cynical individuals provide and receive less social support (Kaplan, Bradley, & Ruscher, 2004), report higher conflict in the family and lower marital satisfaction (Baron et al., 2007).

Do the negative outcomes of cynicism extend beyond bad health, unhappiness, and a poor social life and possibly spread to detrimental economic outcomes? Although existing research on cynical hostility has suggested a negative association between cynical hostility and socioeconomic status (Barefoot et al., 1991; Christensen et al., 2004; Gallo & Matthews, 2003), these associations have been commonly mentioned on the sidelines, with socioeconomic status being treated as a potential mediator in the relationship between cynicism and negative health outcomes, rather than a variable of main interest (Bunde & Suls, 2006; Rutledge et al., 2003). Therefore, the potential mechanisms relating cynicism to income as well as longitudinal associations between these constructs remained largely unaddressed (e.g., Haukkala, 2002).

Somewhat more is known about the associations of cynical beliefs with another factor potentially related to income, namely, organizational, and work success. Studies have shown cynical hostility in work settings to be negatively related to organizational commitment and citizenship behavior (Turner & Valentine, 2001). Social cynicism was found to be a negative predictor of job satisfaction (Leung et al., 2010). Similarly, Machiavellian cynicism has been associated with reduced job satisfaction, an enhanced susceptibility to work-related stress and an increased frequency of counterproductive work behaviors (Dahling et al., 2009; Sakalaki, Richardson, & Thépaut, 2007). Although exhibiting increased competitiveness, individuals high in Machiavellian cynicism typically do not strive for excellence or surpass their less cynical peers in terms of actual task performance and income in most organizational environments (Dahling et al., 2009; for a review, see Wilson, Near, & Miller, 1996).

Finally, the association between cynical beliefs about human nature and income has received attention among political scientists. In this research tradition, this construct has commonly been treated as a part of social capital and most often referred to as social or interpersonal trust (or lack thereof). It has been demonstrated that countries with higher average levels of trust experience higher rates of economic growth than countries populated by less trustful citizens (Fetchenhauer & Vegt, 2001; Knack & Keefer, 1997). However, the positive association between trust and income found at the macro level was not consistently replicated at the individual level. For example, although many studies with cross-sectional designs have reported positive associations between trust and income (Slemrod & Katuščák, 2005; Trautmann, van de Kuilen, & Zeckhauser, 2013), others have shown a negative relationship (Piff, Kraus, Côté, Cheng, & Keltner, 2010). Likewise, using a longitudinal design, Brandt and colleagues (2014) have

¹ The temporal stability is lower in case of Leung’s social cynicism reaching .40 for a 3-month period and higher for cynical hostility and Machiavellianism reaching .60 and .85 for a 4-month and a 3-week periods, respectively (Blumenthal, O’Toole, & Haney, 1984; Jonason & Webster, 2010; Leung et al., 2010).

shown that an increase in an individual's trust level does not predict income increase, whereas de Blied (2013), similarly using longitudinal data, reported the opposite.

The existing research associating cynical hostility, distrust, and Machiavellian cynicism with income has provided rather inconclusive results. In the present research, we explore whether cynical beliefs about human nature, as reflected in these concepts, are prospectively related to economic outcomes, as measured by individuals' income. In the following, we will delineate some potential pathways through which cynical beliefs about human nature may influence financial well-being.

Mechanisms Linking Cynical Beliefs to Income

Prior research has suggested multiple potential mechanisms linking cynicism to income. For example, given the negative association between cynicism and health (e.g., Smith, 1992), the poor health of cynical individuals might represent a factor preventing them from earning high incomes. Additionally, as cynical individuals are less likely to be highly educated (Haukkala, 2002), a lack of education might explain their lower earnings as well. In addition, there is some evidence of a positive association between self-esteem and career success (Kammeyer-Mueller, Judge, & Piccolo, 2008) and a negative association between self-esteem and cynicism (Bernardo, 2013; Guastello et al., 1992), suggesting that individual differences in self-esteem might account for the association between cynicism and income as well. More important, given their lower self-esteem, cynical individuals might also be likely to underreport their income, possibly as a show of self-deprecation or excessive modesty.

Finally, cynical individuals appear to be more neurotic, less agreeable and less extraverted than their less cynical peers (Evans & Revelle, 2008; Hart & Hope, 2004; Martin, Watson, & Wan, 2000); personality dimensions previously shown to be associated with income and career success (Judge et al., 1999; Seibert & Kraimer, 2001; see Judge & Kammeyer-Mueller, 2007 for a review). For example, neuroticism and agreeableness were found to be negatively related to salary level and promotions (Judge et al., 1999; but see Seibert & Kraimer, 2001), whereas extraversion was found to be positively associated with salary level and promotions (Seibert & Kraimer, 2001). Therefore, individual differences in these personality dimensions might represent another mechanism through which cynical beliefs might influence individuals' income. For example, cynical individuals tend to have a high level of negative affectivity (a facet of neuroticism), which might undermine their job performance (Kaplan, Bradley, Luchman, & Haynes, 2009) and consequently prevent promotions and income increase. Furthermore, cynical individuals tend to be less extraverted than their less cynical peers and extraversion in turn was previously shown to promote proactive social behavior, such as seeking feedback, building relationships with colleagues, and protégé-initiated mentoring relationships, which have been linked to positive career outcomes (Aryee, Lo, & Kang, 1999; Wanberg & Kammeyer-Mueller, 2000). Therefore, individual differences in extraversion might also explain why cynical individuals might earn less than their less cynical counterparts. Finally, prior research has shown cynics to be more disagreeable (Martin et al., 2000) than their less cynical peers, whereas disagreeable individuals have been shown to earn more than agreeable individuals (that

has typically been explained by their higher competitiveness and ability to advance their interests in negotiations; e.g., Judge, Livingston, & Hurst, 2012). These previous findings could imply a positive relationship between cynicism and income. However, as our reasoning and findings so far point at a negative relationship, agreeableness might act as a suppressor in the association between cynicism and income and should be accounted for in the analysis.

Overall, in the present studies, we control for individual differences in education, self-esteem, health, and the Big Five personality dimensions and examine whether these can contribute to explaining the potential association between cynical beliefs and income.

Additionally, we propose and test a more subtle mechanism. The inherent suspiciousness and tendency to interpret others' intentions and motives in a negative way, typical of individuals holding cynical beliefs (Pope, Smith, & Rhodewalt, 1990; Vranceanu, Gallo, & Bogart, 2006), might affect their interpersonal behavior in ways that inhibit economic prosperity. Prior research has shown that cynical beliefs about other people are associated with distrustful and uncooperative behavior. For example, individuals scoring high in social cynicism tend to reject collaboration and are frequently unwilling to make a compromise in conflict resolution (Bond, Leung, Au, Tong, & Chemonges-Nielson, 2004). Likewise, cynics are less likely to invest money in a trust game (Kurman, 2011; also, see Singelis, Hubbard, Her, & An, 2003) than less cynical individuals. In fact, several studies using a trust game revealed that people on average trust much less than their peers' actual levels of trustworthiness would warrant and actually lose money by not trusting (Fetchenhauer & Dunning, 2009, 2010). Therefore, cynical individuals might be more likely not to trust others and to forgo cooperation opportunities and are, therefore, less likely to reap the fruits of joint efforts and mutual help. In real life, there are multiple ways in which this mechanism can operate. For example, employees who believe others to be exploitative and dishonest are likely to avoid collaborative projects and forgo the related opportunities. Additionally, in dealing with others, cynical individuals might be likely to overinvest resources on protecting themselves from potential deceit. For example, in organizational settings, cynical individuals are more likely to spend more time "covering their backs" and less time focusing on their jobs than less cynical individual (e.g., Palanski, Kahai, & Yammarino, 2011). Similarly, cynical managers might be less likely to trust their subordinates and are more likely to overinvest in control and supervision, which may consequently jeopardize their business success in the long run (Lau, Lam, & Wen, 2014). Taken together, we propose that cynical beliefs about human nature might trigger particular behavioral tendencies, such as avoidance of cooperation or increased (and unjustified) investments in monitoring and self-protection, which would undermine economic success in the long run.

More important, cynicism should only undermine economic success through this mechanism in sociocultural contexts in which cynical beliefs are unjustified (i.e., in which most other people can actually be trusted and relied on). In contrast, in sociocultural contexts in which cynical beliefs about others are actually warranted, holding cynical beliefs might even have a positive effect on financial well-being by protecting cynics from fraud and deceit.

The Present Research

In the present research, we explore whether holding cynical versus idealist beliefs about human nature predicts individuals' income prospectively. Studies 1–3 test this assumption using large nationally representative longitudinal samples of American (Studies 1 and 2) and German populations (Study 3). Studies 1 and 2 cover a period of 9 and 2 years, respectively, and provide two measurement points of individuals' income, which allows us to examine whether income change from Time 1 to Time 2 is a function of individuals' differences in cynicism at baseline. Study 3 provides measures of cynicism in 2003 and annual follow-ups on individuals' income until 2012, allowing us to apply a multilevel model of change. Study 4 addresses the question of whether the effect of cynicism might be mediated by individual differences in the Big Five personality dimensions. Study 5 provides insights about the hypothesized mechanism of the effect of cynicism on income. Although the mechanism we propose is quite difficult to explore using standard survey or experimental designs, discovering patterns of cross-cultural variability of the effect can give clues (Heine & Norenzayan, 2006). Therefore, in Study 5, we use the data from 41 countries to examine whether the effect of individual cynicism on income is moderated by cross-cultural differences in actual prosocial and antisocial behavior as well as cynicism on a societal level. The data used in all five studies are free for scientific use and can be obtained from the data providers.

Study 1

Method

Data and participants. The data for this study came from the Americans' Changing Lives survey (House, 2014), a nationally representative longitudinal study comprising five waves of data collection (1986, 1989, 1994, 2002, and 2011). Wave one sampled adults aged 25 and older using the stratified area probability sample ($N = 3,617$). As the cynical distrust scale was administered only in waves four (2002) and five (2011), only the participants who participated in these waves were included in the analysis, resulting in a final sample of 1,146 individuals (mean age in 2002 = 57.76, range: 41 – 91; 61.7% women). At Time 1, 59.2% were employed, and 21.6% were retired (at Time 2, 43.7% and 38.2% were employed and retired, respectively).

Measurement. Cynical beliefs about human nature were measured with a four-item version of the Cook-Medley cynical distrust scale (sample item: "Most people will use somewhat unfair means

to gain profit or an advantage rather than lose it"; Cronbach's $\alpha = .71$). Responses were given on a 4-point scale ranging from *strongly disagree* to *strongly agree*.

Participants were asked to indicate their own and their spouse's current joint income from all sources (including wages, social security payments, retirement pay, investments income, etc.) before taxes, in U.S. dollars. If the respondents refused to provide or did not know the exact amount, they were asked a number of unfolding questions (e.g., "Would it be 30,000 or more?" etc.) aimed to determine the dollar range into which their income fell. These cases, as well as cases with missing values, were imputed to a specific income value by survey data providers (Sequential Regression Imputation Method, for details, see House, 2014). We adjusted the income variable for the presence/absence of a spouse by dividing it by two for married respondents (note that the results are the same without this adjustment). Excluding extreme outliers (cases whose income was 5 SDs above average or higher (0.4%) as well as using log-transformed measure of income did not significantly affect the results reported here. To measure subjective health, participants were asked how they would rate their health at the present time (5-point scale ranging from *poor* to *excellent*).

Participants completed a four-item version of the Rosenberg Self-Esteem Scale (Rosenberg, 1965; sample item: "I take a positive attitude toward myself") that uses a 4-point scale ranging from *strongly disagree* to *strongly agree* (Cronbach's $\alpha = .67$).

We also controlled for gender, age at Time 1, respondent's education (measured in the number of years of education) and employment status at Time 1 (employed, retired, or other).

Results and Discussion

Means, SDs, and correlations are presented in Table 1. Cynical individuals had lower incomes at both Time 1 and Time 2 ($r = -.11$ and $r = -.18$, $p < .001$, respectively). Cynicism was also negatively related to education, $r = -.27$, $p < .001$, self-rated health, $r = -.12$, $p < .001$ and self-esteem, $r = -.21$, $p < .001$.

To examine whether initial levels of cynicism predicted income 9 years later, we regressed income at Time 2 on individual differences in cynicism at Time 1 and income at Time 1 (Model 1, Table 2). This model explained 11% of variance in income at Time 2, $F(2, 1,143) = 71.05$, $p < .001$. Consistent with our hypotheses, cynicism at Time 1 negatively predicted income at Time 2 ($\beta = -.15$, $p < .001$), even after controlling for income at Time 1. To examine whether this effect might be due to overlapping variances with other variables (such as education, health, or self-esteem), we entered these variables in Step 2. Adding these vari-

Table 1
Means, SDs, and Correlations, Study 1

	M	SD	1	2	3	4	5	6
1. Cynicism at Time 1	2.44	0.69	—	—	—	—	—	—
2. Income at Time 1	43,595.84	103,101.70	-.11***	—	—	—	—	—
3. Income at Time 2	43,525.16	73,722.32	-.18***	.30***	—	—	—	—
4. Education (in years)	13.12	2.53	-.27***	.17***	.21***	—	—	—
5. Age at Time 1	57.76	12.16	-.02	-.13***	-.19***	-.14***	—	—
6. Subjective health	3.57	0.99	-.19***	.13***	.16***	.25***	-.10**	—
7. Self-esteem at Time 1	3.54	0.53	-.21***	.09**	.12***	.22***	-.10**	.26***

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Hierarchical Regression Analysis of Income, Study 1

Predictor	Model 1			Model 2		
	<i>B</i>	β	95% CI for <i>B</i>	<i>B</i>	β	95% CI for <i>B</i>
Step 1						
Cynicism	-15,708.13	-.15***	[-21,633, -9,782]	-12,934.87	-.12***	[-19,114, -6,755]
Income at Time 1	0.20	.28***	[0.16, 0.24]	0.17	.24***	[0.13, 0.21]
Step 2						
Education	—	—	—	2,663.15	.09**	[962, 4,364]
Gender (men = 1)	—	—	—	10,328.80	.07*	[1,976, 18,680]
Age at Time 1	—	—	—	-647.72	-.11**	[-1,033, -262]
Employed (yes = 1)	—	—	—	8,065.29	.05	[-1,708, 17,838]
Subjective health	—	—	—	3,324.92	.05	[-986, 7,636]
Self-esteem	—	—	—	2,714.20	.02	[-5,251, 10,679]
Multiple <i>R</i>		.33***			.40***	
ΔR^2					.05***	
Adjusted <i>R</i> ²		.11***			.15***	

Note. CI = confidence interval.

* $p < .05$. ** $p < .01$. *** $p < .001$.

ables to the model explained an additional 5% of variance in income at Time 2, $F(6, 1,137) = 11.01, p < .001$. More important, the effect of cynicism remained highly significant, albeit slightly reduced in size ($\beta = -.12, p < .001$).

Overall, this study presents the first evidence of a longitudinal effect of cynical beliefs on income. It also shows that differences in health and education (as well as other sociodemographic controls we applied) could explain only a small proportion of the effect of cynicism on income. More important, we also found that the association between cynicism and income remained even after controlling for individual differences in self-esteem. If cynical individuals' tendency to have lower self-esteem led to relative income underreporting, controlling for self-esteem would have made the effect of cynicism on income disappear. However, our results showed that self-esteem did not interfere with the effect of cynicism on income in any way.

Although this study was based on somewhat older respondents, and the measure of income included spouses' incomes, in Study 2 we address this limitation by examining the longitudinal effect of cynicism on respondents' personal incomes in the general population of the United States.

Study 2

Method

Data and participants. In this study, we used the data from the 2010 panel dataset of the General Social Survey (NORC, 2014), which is a representative longitudinal study of the American population. The dataset included two waves: 2010 and 2012. As cynical beliefs about human nature were only administered to a randomly selected subsample, the final sample for the present analyses consisted of 497 participants who participated in both waves and had valid values on all variables (mean age at Time 1 was 43.73, $SD = 13.63$, age range from 19 to 88; 44.1% were women). Of the participants in the final sample, 89.3% were employed either full- or part-time at Time 1 and 88.9% at Time 2.

Measurement. To measure cynicism, we used participants' responses to the following two items, derived from the faith in

people scale (Rosenberg, 1956): "Generally speaking, would you say that most people can be trusted, or that you cannot be too careful in dealing with people?" (1 = *you cannot be too careful*, 5 = *most people can be trusted*) and "Generally speaking, do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?" (1 = *most people would try to take advantage of you*, 5 = *most people would try to be fair*).² The responses were recoded so that higher values indicate stronger cynicism and combined into one scale (Cronbach's $\alpha = .79, r = .65$).

Participants were asked to indicate which categorize their personal income from all sources (wages, interests, or dividends, etc.) for the previous year fell into (25 categories, ranging from "under \$ 1,000" to "\$ 150,000 and over"). We included the same control variables as in Study 1, except for self-rated health (that was only available for a small subsample of participants): years of education, gender, age at Time 1, employment status at Time 1 (full- vs. part-time vs. other).

Results and Discussion

We followed the same procedure as in Study 1. A look at the descriptive statistics (see Table 3) suggests that cynical individuals earned lower incomes than their idealist counterparts ($r = -.20$ and $r = -.23, p < .01$ at Time 1 and 2, respectively). Consistent with the results of Study 1, they were also less educated, $r = -.32, p < .01$.

To examine whether cynicism predicted income prospectively, we regressed income at Time 2 on cynicism at Time 1 and income at Time 1 (Table 4, Model 1). Income and cynicism together accounted for 57% of the variance in income at Time 2, $F(2, 494) = 328.56, p < .001$. Cynicism was negatively related to income at Time 2, even after controlling for income at Time 1

² The survey also included the question, "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?" which was asked of a different subsample than the two questions we used in the analyses and was, therefore, not included in the present analysis.

Table 3
Means, SDs, and Correlations, Study 2

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Cynicism at Time 1	2.98	1.17	—	—	—	—
2. Income at Time 1	14.46	6.10	-.20**	—	—	—
3. Income at Time 2	14.85	5.92	-.23**	.75**	—	—
4. Education (in years)	14.16	2.83	-.32**	.34**	.37**	—
5. Age at Time 1	43.73	13.63	-.25**	.35**	.09*	.10*

* $p < .05$. ** $p < .01$. *** $p < .001$.

($\beta = -.09$, $p < .01$). In Step 2, we entered control variables (age, gender, education, and employment status), explaining an additional 6% of the variance, $F(5, 489) = 15.26$, $p < .001$. Similar to Study 1, the effect of cynicism was slightly reduced but remained significant ($\beta = -.07$, $p < .05$).³

Therefore, this study shows that the negative effect of cynicism on income is present in the general population of U.S. citizens. Combined together with the results of Study 1, we can conclude that this effect persists with regard to various measures of cynicism (Cook-Medley scale in Study 1 and Faith in People scale in Study 2) and various measures of income (open format in Study 1 vs. categories in Study 2).

Study 3

Although there were only two measurement points in Study 1 and 2, we examined the trajectories of annual income changes in the course of 9 years in Study 3. Using a nationally representative sample of the German population and a multilevel modeling technique, we explored whether cynical individuals had a different income development trajectory compared with their idealist counterparts.

Method

Data and participants. The data for this study came from the German Socio-Economic Panel (GSOEP, v. 29). The GSOEP is a nationally representative annual panel study that currently samples ~22,000 individuals (Wagner, Frick, & Schupp, 2007). The measures of cynicism were collected in 2003,⁴ and the information on respondents' income was available annually. The sample consisted of 15,698 individuals who had a valid baseline measure of cynicism and provided information on their income in at least one wave (48.5% women in 2003, mean age in 2003 was 40.31, $SD = 12.37$). In 2003 (baseline), among those who had a valid income value, 63.2% were full-time employed, 17.1% were part-time employed (the remaining cases were self-employed, unsystematically employed, or sheltered workshop workers).

Measurement. To measure cynicism, we used the following five items: "Do you believe that most people would exploit you if they had the opportunity or would attempt to be fair toward you?" (1 = *would exploit*, 2 = *would be fair*), "Would you say that for most of the time, people attempt to be helpful or only act in their own interests?" (1 = *attempt to be helpful*, 2 = *act in their own interest*), "On the whole one can trust people," "Nowadays, one cannot rely on anyone," "If one is dealing with strangers, it is better to be careful before one can trust them." The former two items allowed a dichotomous response, and the latter three were

answered on a 4-point agree–disagree scale. The responses to these five items were recoded in such a way that higher values indicated stronger cynicism, z-standardized and combined into an index of cynicism (Cronbach's $\alpha = .71$).

As an indicator of respondents' income, the gross monthly labor income was used.⁵ Missing values (9.2%) were imputed by the survey data providers (s. SOEP documentation for details). Similar to Study 1, excluding extreme outliers (5 *SDs* above the mean or higher, .3%) and using a log-transformed measure of income did not produce any different results.

We included the same control variables as in Study 1: age, gender, education (number of years), employment status (full-time vs. part-time vs. other), and subjective health ("How satisfied are you with your health?", 11-point scale).

Analytical strategy. The available data allowed us to examine between-individual differences in income development over time. Applying a multilevel analysis of change, in which yearly measurement occasions are nested within individuals, represents the most suitable method of analysis for this aim. This technique has multiple advantages: it allows for missing data (i.e., not all participants must have valid data at all measurement occasions), it statistically accounts for the nested data structure (via modeling the variance within and between participants separately) and (in contrast to a repeated-measures analysis of variance [ANOVA]) it allows both time-invariant (e.g., gender and baseline cynicism) and time-variant (e.g., employment status or education each year) predictors. Therefore, we could examine whether cynical individuals were less likely to experience income increase over the years and control yearly changes in education, age, employment mode (full- vs. part-time) and health.

Time was measured in years and entered as a continuous predictor (from 2003 = 0 to 2012 = 9). We modeled the intercept and the slope of time as random and used the software HLM 7 (Raudenbush, Bryk, & Congdon, 2011).

Results and Discussion

Replicating the results of Study 1 and 2, individual differences in cynicism as measured at baseline showed a negative correlation with income (ranging between $r = -.09$, $p < .001$ in 2003 and $r = -.13$, $p < .001$, in 2012), education (ranging between $r = -.22$, $p < .001$ in 2003 and $r = -.25$, $p < .001$ in 2012) and subjective health (ranging between $r = -.20$, $p < .001$ in 2003 and $r = -.17$, $p < .001$ in 2012).

To examine whether cynicism also predicted the trajectory of an individual's income development over time, we estimated a series of multilevel regression models. In Model 1 (see Table 5), we entered cynicism, time, and the interaction term between them. The interaction effect was significant ($b = -8.82$, $p < .01$), suggesting that individuals' income development trajectories dif-

³ Applying weighting to adjust for selection biases and nonresponses produced an almost identical result ($\beta_{\text{cynicism, step 2}} = -.08$, $p < .05$).

⁴ The same questions were also part of the wave of 2008; we selected the wave of 2003 as a baseline as it gave a longer observation period.

⁵ The dataset also included information regarding income from other sources (pensions, unemployment benefits, parental benefits, etc.), yet the exact sources the respondents were asked to indicate their income from varied across the years, making the analyses of all-sources-income development not feasible.

Table 4
Hierarchical Regression Analysis of Income, Study 2

Predictor	Model 1			Model 2		
	<i>B</i>	β	95% CI for <i>B</i>	<i>B</i>	β	95% CI for <i>B</i>
Step 1						
Cynicism	-.43	-.09**	[-.72, -.13]	-.36	-.07*	[-.66, -.07]
Income at Time 1	0.71	.73***	[0.66, 0.77]	0.60	.62***	[0.53, 0.67]
Step 2						
Education	—	—	—	0.28	.13***	[0.15, 0.41]
Gender (men = 1)	—	—	—	0.99	.08**	[0.32, 1.66]
Age at Time 1	—	—	—	-0.05	-.11**	[-0.07, -0.02]
Employed full-time	—	—	—	2.74	.21***	[1.69, 3.78]
Employed part-time	—	—	—	0.49	.03	[-0.75, 1.74]
Multiple <i>R</i>	.76***			.78***		
ΔR^2				.04***		
Adjusted <i>R</i> ²	.57***			.60***		

Note. CI = confidence interval. The reference category for employment status is “not in the labor force.”
* $p < .05$. ** $p < .01$. *** $p < .001$.

ferred as a function of their baseline levels of cynicism. To test whether this effect was robust against individual differences in education, employment, gender, age, and health, we entered these variables in Model 2. The interaction effect between time and cynicism remained significant ($b = -7.80$, $p < .01$), suggesting that individual differences in health, education, and so forth, did not account for the negative effect of cynicism on income growth.

The nature of the interaction is presented in Figure 1, which plots estimated monthly income levels starting from 2003 until 2012, depending on individuals' baseline cynicism level. While controlling for mode of employment, education, and other sociodemographic differences with each passing year, the least cynical individuals' estimated monthly gross income increased by €27 ($b = 27.01$, $p < .001$), that is, after 9 years, their monthly income had increased by an estimated €240. Individuals whose 2003 cynicism score was 1 *SD* below the sample mean experienced a

monthly income increase of approximately €150 within the observation period ($b = 17.34$, $p < .001$). In contrast, individuals who scored 1 *SD* above the sample mean in cynicism reported a monthly income increase of only approximately €61 during the observation time ($b = 6.89$, $p < .05$). The most cynical individuals (scoring the highest) did not experience any significant income increase at all over the same period of time ($b = -.67$, *ns*).

The results of this study replicated the negative effect of cynicism on income demonstrated in Study 1 and 2 in a nationally representative sample of the German population. More important, this study showed that baseline cynicism did not just predict income in any given year in the future but also income development trajectories over a period of 9 years.

Study 4

The goal of Study 4 was to examine whether individual differences in the Big Five dimensions of personality—in particular, neuroticism and extraversion—can account for the effect of cynical beliefs on income. Furthermore, we controlled for agreeableness as a potential suppressor in the negative relationship between cynicism and income.

Table 5
Multilevel Regression Predicting Intraindividual Changes in Income Over Time, Study 3

Predictor	Model 1		Model 2	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Cynicism	-308.66***	27.96	-314.78***	25.28
Time	47.90***	2.11	12.08***	2.74
Cynicism \times Time	-8.82**	3.02	-7.80**	2.92
Education	—	—	157.84***	13.39
Gender (men = 1)	—	—	1,138.18***	29.65
Age	—	—	33.96***	1.18
Employed full-time	—	—	883.50***	32.09
Employed part-time	—	—	145.84***	24.14
Subjective health	—	—	4.49	2.85
No. of level 1 units (person-year)	93,784		91,088	
No. of level 2 units (persons)	15,698		15,146	

Note. The reference category for employment status is “other”; robust standard errors; education and subjective health are centered around group mean, cynicism and age—around grand mean (centering age on each individual's mean would result in confounding the effects of age and time).
* $p < .05$. ** $p < .01$. *** $p < .001$.

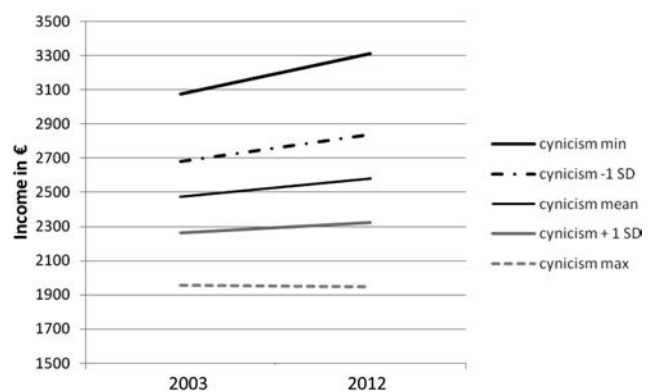


Figure 1. Income trajectories 2003–2012 as a function of baseline cynicism score (based on Model 2, with covariates), Study 3.

Method

Data and participants. The data for this study were collected as a part of regular pretests of the GSOEP. The GSOEP pretests typically encompass a sample of 1,000 individuals who are representative of the German population aged 16 years and older, and are used to examine methodological as well as conceptual research questions (e.g., Kroh, 2007; Stavrova, Schlösser, & Baumert, 2014). The pretest participants are *not* GSOEP panel members, therefore this study is based on a different sample than Study 3.

The measures of cynical beliefs and the Big Five were included in two pretests, conducted in 2005 ($N = 1,012$) and 2006 ($N = 1,063$), which were merged for the present analyses. As only working participants were asked to provide their income and income values were not imputed, the final sample consisted of 491 individuals (51.1% women, mean age 40.82, $SD = 12.48$), 59.5% of whom worked full-time, and 22.6% were employed part-time (the remaining cases were self-employed, unsystematically employed, or sheltered workshop workers).

Measurement. Cynical beliefs about human nature were measured with the same five questions used in Study 3, using the same response options (e.g., “Would you say that for most of the time, people attempt to be helpful or only act in their own interests?”; Cronbach’s $\alpha = .68$).

Participants were asked to report their personal gross labor income from the last month. Excluding extreme outliers (5 SD s above the mean or higher, which occurred in three cases) did not produce any different results.

The Big Five personality dimensions were measured using a brief version of the Big Five Inventory (Gerlitz & Schupp, 2005), which includes three items per dimension answered on a 7-point scale (Cronbach’s α : .62 [extraversion], .52 [agreeableness], .65 [conscientiousness], .55 [neuroticism], and .66 [openness]). These brief measures were developed to cover the maximum bandwidth of the underlying dimensions, which explains their moderate internal consistency. Nevertheless, the brief scales show high correlations with the original scales (all r s $> .86$; Donnellan & Lucas, 2008), a similarly good temporal stability (6-month test–retest reliabilities reach r s $> .75$; Lang, Lüdtke, & Asendorpf, 2001) and are widely used in personality and individual differences research, particularly for large national or cross-national samples (e.g., Gebauer et al., 2014; Stavrova & Ehlebracht, 2015).

We further included the same control variables as in Studies 1, 2, and 3: age, gender, education (whether the respondent had

attained a college or a vocational degree or not), employment status (full-time vs. less than full-time), and subjective health (“How would you describe your current health status?” answered on a 5-point scale).

Results and Discussion

A bivariate correlation analysis showed that cynical individuals reported lower incomes than their less cynical counterparts, $r = -.16, p < .001$. Among the Big Five, cynicism was negatively related to extraversion, $r = -.15, p < .01$ and openness, $r = -.13, p < .01$ and positively related to neuroticism, $r = .22, p < .001$. Neuroticism was negatively related to income, $r = .22, p < .001$. We did not detect any significant associations between income and other dimensions of the Big Five (see Table 6).

To examine whether the effect of cynical beliefs about human nature on income can be explained by the Big Five (in particular, neuroticism and extraversion), we conducted a hierarchical multiple regression analysis (see Table 7). We entered cynicism in Step 1. This model explained 3% of the variance in income, $F(1, 489) = 12.95, p < .001$. Consistent with the correlational results, cynicism negatively predicted income ($\beta = -.16, p < .001$). In Step 2, we added the Big Five dimensions, which explained an additional 5% of the variance in income, $F(5, 484) = 4.70, p < .001$. Among the Big Five, only the effects of neuroticism ($\beta = -.19, p < .001$) and agreeableness reached significance ($\beta = -.10, p < .05$). More important, the effect of cynicism remained significant, although slightly reduced in size ($\beta = -.12, p < .01$). Finally, in Step 3, we entered sociodemographic control variables and health. These variables accounted for an additional 30% of variance, $F(5, 479) = 45.90, p < .001$. Again, the effect of cynical beliefs remained significant ($\beta = -.10, p < .01$), whereas the effects of neuroticism and agreeableness did not (both β s $= -.05, p > .15$).

As the effect of cynicism was slightly reduced, when the Big Five dimensions were introduced, we additionally tested for mediation using Preacher and Hayes’ (2008) bootstrapping method with 5,000 resamples and a 95% bias-corrected confidence interval. All Big Five dimensions were entered as multiple mediators and other independent variables (from Step 3, Table 7) were entered as covariates. A bootstrap test revealed indirect effects of $-23.96, -20.95, -0.70, 6.37$, and -5.39 with 95% confidence intervals of $[-73.88, 7.57]$, $[-70.04, 5.15]$, $[-17.87, 6.16]$, $[-4.53, 39.81]$, and $[-45.52, 20.74]$ for neuroticism, extraversion, conscientiousness, agreeableness, and openness, respectively.

Table 6
Means, SDs, and Correlations, Study 4

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Cynicism	-0.01	0.65	—	—	—	—	—	—	—	—
2. Income	2,012.65	1,832.69	-.16***	—	—	—	—	—	—	—
3. Age	40.82	12.48	-.07	.21***	—	—	—	—	—	—
4. Subjective health	3.85	.89	-.14**	.09*	-.29***	—	—	—	—	—
5. Extraversion	4.93	1.12	-.15**	.06	-.08	.15**	—	—	—	—
6. Neuroticism	3.90	1.22	.22***	-.21***	-.01	-.25***	-.17**	—	—	—
7. Conscientiousness	5.86	.87	-.06	.08	.21***	.06	.12**	-.10*	—	—
8. Agreeableness	5.39	.95	-.06	-.05	.07	.11*	.08	-.11*	.26***	—
9. Openness	4.95	1.19	-.13**	.03	.01	.04	.43***	-.04	.07	.09

Note. The measure of cynicism is a composite of five standardized items.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7
Hierarchical Regression Analysis of Income, Study 4

Predictor	Model 1			Model 2			Model 3		
	<i>B</i>	β	95% CI for <i>B</i>	<i>B</i>	β	95% CI for <i>B</i>	<i>B</i>	β	95% CI for <i>B</i>
Step 1									
Cynicism	-453.15	-.16***	[-700, -205]	-336.68	-.12**	[-588, -85]	-285.57	-.10**	[-495, -75]
Step 2									
Extraversion	—	—	—	14.68	.01	[-143, 73]	86.08	.05	[-46, 212]
Neuroticism	—	—	—	-286.06	-.19***	[-420, -151]	-73.96	-.05	[-192, 44]
Conscientiousness	—	—	—	152.84	.07	[-36, 342]	16.01	.01	[-145, 177]
Agreeableness	—	—	—	-190.67	-.10*	[-363, -17]	-104.89	-.05	[-249, 39]
Openness	—	—	—	.98	.001	[-146, 148]	22.94	.02	[-99, 145]
Step 3									
Gender (men = 1)	—	—	—	—	—	—	716.43	.20***	[426, 1,006]
Age	—	—	—	—	—	—	29.27	.20***	[17, 41]
Education	—	—	—	—	—	—	510.97	.10*	[108, 913]
Employed full-time	—	—	—	—	—	—	1,480.12	.40***	[1,184, 1,175]
Subjective health	—	—	—	—	—	—	119.69	.06	[-42, 281]
Multiple <i>R</i>		.16***			.27***			.61***	
ΔR^2					.05***			.30***	
Adjusted <i>R</i> ²		.02***			.06***			.36***	

Note. CI = confidence interval. The reference category for employment status is “employed, part-time, or less”; for education “no college” or “other professional degree.”

* $p < .05$. ** $p < .01$. *** $p < .001$.

Given that zero was always included in the confidence intervals, we concluded that the Big Five dimensions were not significant mediators of the effect of cynicism on income. The results were identical when each of the Big Five dimensions was tested in a single mediation model. That is, the association between cynicism and income was neither mediated by extraversion and neuroticism nor suppressed by agreeableness.

Overall, the results of this study have again demonstrated a negative association between cynical beliefs about human nature and income. Most important, they showed that individual differences in the Big Five personality dimensions could not account for this association. In fact, after controlling for sociodemographic factors and health, cynicism remained the only significant predictor of income among personality variables. So far, we have shown that the negative effect of cynical beliefs on income is unlikely to result from being confounded with sociodemographic variables, self-esteem, health, and is not mediated by the Big Five personality traits, suggesting that another—yet unobserved—mechanism may likely be at work.

Study 5

We assume that cynical individuals' propensity for suspiciousness and fear of exploitation might affect the way they behave in interpersonal domains (e.g., by choosing to forgo cooperation opportunities or overinvesting resources in protecting themselves from deceit). However, these behaviors can only result in financial losses in sociocultural contexts in which people in general (and their interaction-partners in particular) are cooperative, trustworthy, honest, and reliable. In contrast, in sociocultural contexts in which the cynical views of others are well justified—for example, those with low helping and high crime rates—the negative effect of cynicism on economic outcomes is likely to disappear or even reverse. To test this assumption, we examined whether the associations between cynicism and income depended on the

respective country's sociocultural climate. We focused on the following country-level characteristics: the cultural dimension of societal cynicism (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004), country-level prosocial (helping rates) and antisocial (homicide rates) behavior.

Societal cynicism has been described as reflecting the hostility of the members of a social system toward each other as well as the hostility of the system itself and its social institutions (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004). In countries characterized by high levels of societal cynicism, “citizens believe that they are surrounded by ‘a nature red in tooth and claw’ and are suppressed by powerful others and subjected to the depredations of willful and selfish individuals, groups, and institutions” (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004, p. 566). The Societal Cynicism Index measures the hostility of a sociocultural context as reflected in the perception of the individuals who are part of this context. Therefore, we additionally resorted to two more objective indicators of the existing behavioral patterns reflecting the hostility of a sociocultural context: rates of prosocial behaviors, such as charity memberships, donations, and helping strangers, based on the Gallup World Poll data (CAP, 2012) and official homicide rates (Bisogno et al., 2013). We specifically used homicide rates because, compared with theft, burglary or fraud, they are less contaminated by country differences in crime reporting rates (Soares, 2004).

Overall, although these three variables might seem very different at first glance, they are highly correlated; countries with high scores in societal cynicism tend to have a lower helping index ($r(18) = -.53, p < .05$) and higher homicide rates ($r(18) = .45, p = .06$; homicide rates and World Giving Index: $r(41) = -.38, p < .05$), supporting our assumption that these country-level measures reflect the same underlying dimension—the degree to which one's sociocultural environment is dominated by pro- versus antisocial behavioral tendencies.

Method

Data and participants. We used the data of the last wave of the European Value Study (EVS, 2010). EVS represents a large-scale cross-national research program on human values, lifestyles, socioeconomic conditions, beliefs, and so forth. The dataset is based on nationally representative samples gathered in a multistage sampling procedure. For the analysis involving the World Giving Index and the Homicide rates, we used the data from 41 countries.⁶ As the Societal Cynicism Index was available only for 18 countries sampled in the EVS, the analysis involving the Societal Cynicism Index was restricted to the data from these countries (see Table 6 for countries' descriptive statistics). To account for the nested data structure (individuals nested within countries), we used multilevel regression analyses.

Measurement. The EVS included the following three items stemming from the faith in people scale (Rosenberg, 1957) that were used to measure individual differences in cynical beliefs about human nature: "Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?", "Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?", and "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?". The responses to the former two questions were given on a 10-point scale, and the responses to the latter question were in a dichotomous format. We recoded the values in such a way that high scores indicated more cynical beliefs than lower scores, z-standardized them and combined them into an indicator of cynicism (Cronbach's $\alpha = .67$).

The EVS included a category-based measure of income; participants were asked to indicate which of 12 categories their monthly household income fell into (the categories were in national currency; when converted to Euros, they ranged from "less or equal to €500" to "more or equal to €10,000"). For the analyses, we used the income variable corrected for purchasing power parity (supplied by the survey providers, see documentation for details). We further adjusted the income variable for the number of adult household members (note that the results are the same without this adjustment).

Similar to Studies 1–3, we controlled for age, gender, education (three categories: lower, medium and higher), health ("Describe your state of health these days: 1 = *very poor*, 5 = *very good*) and employment status (employed, vs. unemployed vs. other).

At the country level, we used the Societal Cynicism Index developed by Bond et al. (2004) by aggregating individual responses to such items as "To care about societal affairs only brings trouble for yourself" or "Kind-hearted people are easily bullied." The index has good external validity and is largely used in cross-cultural research (e.g., Bond, Leung, Au, Tong, De Carrasquel, et al., 2004; Gelade, Dobson, & Gilbert, 2006; Leung et al., 2012).

To measure cultural differences in prosocial behavior, we used the World Giving Index supplied by the Charities Aid Foundation (CAP, 2012). The World Giving Index was designed to reflect the scope and nature of helping behavior around the world. It is based on individuals' responses to the following three questions: "Have you done any of the following in the past month: donated money to a charity, volunteered your time to an organization and helped a stranger or someone you didn't know who needed help?" These

data were collected within the Gallup World Poll—the largest international survey project to date. It includes nationally representative samples of least 1,000 individuals from currently more than 160 countries. The World Giving Index was computed by averaging individual responses to the three questions presented above (CAP, 2012).

As a measure of the extent of antisocial behavior, we used the country-level "intentional homicide rates per 100,000 population" supplied by the United Nations Office on Drugs and Crime (Bisogno et al., 2013). Finally, we used country differences in GDP per capita corrected for purchasing power parity in 2008 (World Databank, 2014) as a control variable.

Results and Discussion

An examination of bivariate correlations between cynicism and income in each country separately (see Table 8) showed that it ranged from $r(936) = -.17, p < .01$ (in Italy) to $r(1,391) = .06, p < .05$ (in Macedonia), indicating substantial cross-cultural variations.

To examine whether country differences in the World Giving Index, homicide rates and societal cynicism accounted for the variability in the associations between individual cynicism and income, we estimated several multilevel regression models.

Model 1 (see Table 9) shows the effects of individual cynicism and the World Giving Index and their interaction. The interaction was significant ($b = -.003, p < .001$), suggesting that the effect of individual cynicism on income is stronger in countries with higher rates of giving than in countries with lower rates. Model 2 shows that this effect is robust against controlling for individual sociodemographic characteristics and health as well as countries' GDP per capita ($b = -.002, p < .001$). Figure 2 plots the estimated regression lines of individual cynicism on income for countries with a below average ($-1 SD$) and above average ($1 SD$) frequency of giving. Only in countries with relatively high rates of prosociality does individual cynicism undermine one's economic well-being ($b = -.05, p < .001$), whereas in countries with a below average frequency of prosocial behavior, it has no effect ($b = -.01, ns$).

Models 3 and 4 examine whether cross-national differences in homicide rates explain country differences in the effect of individual cynicism on income. The results indicate a significant interaction between individual cynicism and national homicide rates (Model 3: $b = .01, p < .01$), which remains unchanged after controlling for individual and country-level control variables (Model 4: $b = .01, p < .01$; Figure 3). The negative effect of individual cynicism on income is significantly stronger at lower rates of homicide ($1 SD$ below the mean: $b = -.05, p < .001$) than at higher rates ($1 SD$ above the mean: $b = -.01, p < .05$). In fact, in countries with the highest homicide rates in our dataset, cynical individuals are actually expected to be better off financially than their less cynical counterparts ($b = .03, p < .05$).

Finally, Models 5 and 6 test whether country differences in societal cynicism moderated the effect of individual cynicism on income as well. The interaction between individual and

⁶ Kosovo could not be included due to missing GDP values; Iceland, Norway, and Switzerland—because of missing values in the World Giving Index.

Table 8
Countries' Descriptive Statistics

Country	<i>N</i>	World Giving Index	Homicide rates ^a	Societal cynicism score	<i>r</i> (cynicism and income)
Albania	1,331	13	2.90	—	-.03
Armenia	1,296	28	1.90	—	-.08**
Austria	1,241	41	0.50	—	-.15**
Azerbaijan	1,467	19	2.80	—	-.01
Belarus	1,343	34	1.90	—	-.09**
Belgium	1,354	20	1.80	58.90	-.10**
Bosnia and Herzegovina	1,163	15	2.30	—	-.07*
Bulgaria	1,333	25	5.70	—	-.09**
Croatia	1,276	16	1.50	—	-.10**
Cyprus	1,234	44	0.80	—	-.03
Czech Republic	1,419	24	1.10	54.60	-.07**
Denmark	1,088	49	1.00	—	-.12**
Estonia	1,323	27	6.40	64.10	-.01
Finland	1,001	45	2.50	53.10	-.10**
France	1,353	34	1.30	58.20	-.08**
Georgia	1,332	17	6.00	64.30	-.06*
Germany	1,786	38	0.90	61.00	-.13**
Greece	1,274	13	1.30	63.40	-.07**
Hungary	1,262	24	1.50	58.10	-.09**
Ireland	548	60	1.10	—	-.08
Italy	936	33	1.00	51.30	-.17**
Latvia	1,291	29	4.60	59.50	-.08**
Lithuania	1,247	22	9.50	—	-.10**
Luxembourg	1,206	41	1.60	—	-.14**
Macedonia	1,391	23	1.70	—	.06*
Malta	790	44	1.40	—	-.04
Moldova	1,292	26	6.50	—	-.04
Montenegro	1,244	13	3.90	—	-.08**
Netherlands	1,292	53	0.90	51.70	-.13**
Poland	1,139	24	1.20	—	-.06*
Portugal	805	19	1.20	54.30	-.03
Romania	1,141	19	2.10	60.90	-.08**
Russian Federation	1,256	18	11.60	59.70	.01
Serbia	1,278	15	1.40	—	-.09**
Slovak Republic	1,133	27	1.70	—	-.07*
Slovenia	816	38	0.50	—	-.10**
Spain	938	29	0.90	55.30	-.04
Sweden	1,055	38	0.80	—	-.13**
Turkey	2,130	15	3.30	54.60	-.01
Ukraine	1,331	21	5.20	—	-.03
United Kingdom	1,360	51	1.20	52.70	-.11**

^a For 2008.

* $p < .05$. ** $p < .01$. *** $p < .001$.

societal cynicism is significant (Model 5: $b = .01$, $p < .01$) and robust against individual- and country-level control variables (Model 6: $b = .004$, $p < .05$; Figure 4). The lower the societal cynicism score of a country one lives in, the stronger the negative association between one's own cynicism and income. Figure 4 presents the results of the simple slope analysis of this interaction. It shows that in countries with a below-average (-1 *SD*) societal cynicism score, individual cynicism is associated with financial losses ($b = -.05$, $p < .001$); in contrast, in countries with an above-average societal cynicism score, cynical individuals earn as much as their less cynical counterparts ($b = -.01$, *ns*).

Overall, the results of Study 4 suggest that the negative association between cynicism and income depends on the sociocultural environment one lives in. Specifically, in countries with a high societal cynicism, high rates of antisocial and low

rates of prosocial behaviors, cynical beliefs about the human nature are warranted and individuals holding these views are not worse off financially than their less cynical counterparts.

General Discussion

While previous research has associated cynicism with detrimental outcomes across a wide range of spheres of life, including physical health (e.g., Smith et al., 2004), psychological well-being (e.g., Heponiemi et al., 2006), and marital adjustment (e.g., Baron et al., 2007), the present research has established an association between cynicism and individual economic success. Across three longitudinal studies using different nationally representative samples of the United States and Germany, different measures of cynicism and income, different time spans and different methods of analysis (hierarchical regression in Study 1, 2, and 4 and

Table 9
Multilevel Regression of Individual Cynicism and Context Characteristics on Income, Study 5

Predictor	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Country-level predictors												
World Giving Index	0.02 ^{***}	0.003	0.01*	0.004	-0.08 ^{***}	0.02	-0.04 ^{***}	0.01	-	-	-	-
Homicide rates	-	-	-	-	-	-	-	-	-	-	-	-
Societal cynicism	-	-	0.00002 ^{***}	0.000004	0.00002 ^{***}	0.000004	0.00002 ^{***}	0.000004	-0.05 ^{***}	0.02	-0.02	0.01
GDP per capita	-	-	-	-	-	-	-	-	-	-	0.00002 ^{**}	0.000004
Individual-level predictors												
Cynicism	-0.06 ^{***}	0.01	-0.03 ^{***}	0.004	-0.06 ^{***}	0.01	-0.03 ^{***}	0.004	-0.07 ^{***}	0.01	-0.03 ^{***}	0.01
Lower education	-	-	-0.43 ^{***}	0.05	-	-	-0.43 ^{***}	0.05	-	-	-0.49 ^{***}	0.02
Medium education	-	-	-0.25 ^{***}	0.03	-	-	-0.25 ^{***}	0.03	-	-	-0.31 ^{***}	0.01
Gender (men = 1)	-	-	0.01	0.01	-	-	0.01	0.01	-	-	0.03 ^{**}	0.01
Age	-	-	0.003 ^{***}	0.001	-	-	0.003 ^{***}	0.001	-	-	0.003 ^{***}	0.0003
Employed	-	-	0.17 ^{***}	0.02	-	-	0.17 ^{***}	0.02	-	-	0.21 ^{***}	0.01
Unemployed	-	-	-0.07 ^{***}	0.02	-	-	-0.07 ^{***}	0.02	-	-	-0.13 ^{***}	0.02
Subjective health	-	-	0.04 ^{***}	0.01	-	-	0.04 ^{***}	0.01	-	-	0.05 ^{***}	0.005
Cross-level interactions												
World Giving Index × Cynicism	-0.003 ^{***}	0.001	-0.002 ^{***}	0.0004	-	-	-	-	-	-	-	-
Homicide rates × Cynicism	-	-	-	-	0.01 ^{***}	0.003	0.01 ^{***}	0.002	0.01 ^{**}	0.002	0.004 [*]	0.002
Societal cynicism × Cynicism	-	-	-	-	-	-	-	-	-	-	-	-

Note. The reference category for employment status is "other," for education—"higher education"; robust standard errors.
* $p < .05$. ** $p < .01$. *** $p < .001$.

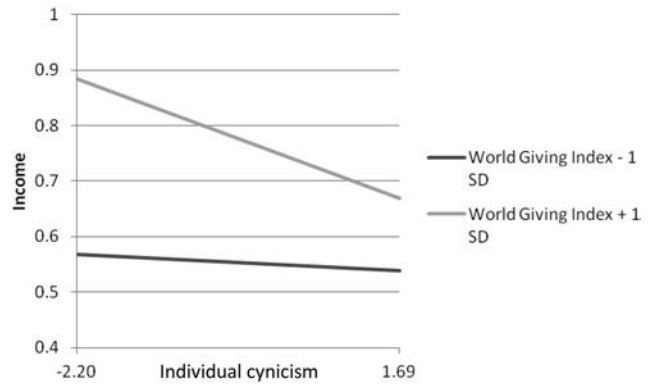


Figure 2. Income (adjusted for purchasing power and family size) as a function of individual cynicism and World Giving Index (based on Model 2, with covariates), Study 4.

multilevel modeling in Study 3), we have consistently shown that cynical beliefs about human nature have adverse effects on individuals' income. Although cynical individuals were more likely to report worse health and lower education, these differences could not completely explain their lower earnings. Similarly, though cynical individuals were more likely to be neurotic and introverted, these differences did not mediate the effect of cynical beliefs on income. Therefore, we proposed a more subtle mechanism: cynical individuals are likely to lack the ability (or willingness) to rely on others and therefore face serious impairments in regard to living and working in a social world. They are likely to suspect mean motives behind other people's behavior, might be less likely to join collaborative efforts and avoid asking for help in case of need, which may eventually undermine their economic success.

This mechanism implies that cynical beliefs are associated with economic drawbacks only if these beliefs are unjustified, and most people are actually trustworthy, honest, and kind most of the time. According to the rising cross-cultural perspective in psychology, an examination of cultural differences in psychological phenomena represents a valuable opportunity to gain insights into the potential underlying mechanisms of these phenomena (Heine &

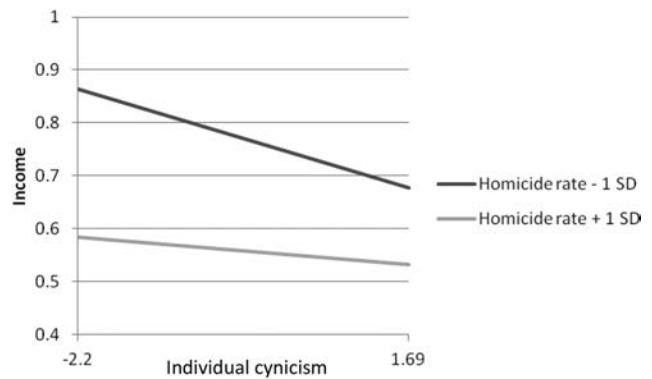


Figure 3. Income (adjusted for purchasing power and family size) as a function of individual cynicism and homicide rates (based on Model 2, with covariates), Study 4.

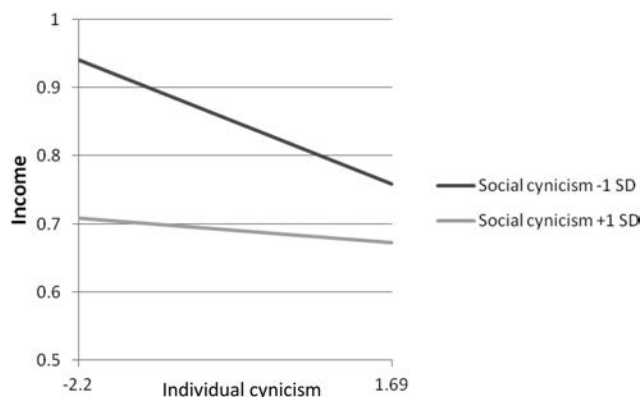


Figure 4. Income (adjusted for purchasing power and family size) as a function of individual cynicism and societal cynicism (based on Model 4, with covariates), Study 4.

Norenzayan, 2006). Following this idea, we used a cross-cultural approach to provide the first tentative evidence for this proposed mechanism. Using data from 41 countries, we demonstrated that the negative effect of cynicism on income is indeed restricted to countries with comparatively high rates of prosocial behavior, low levels of antisocial behavior and societal cynicism. In contrast, in sociocultural contexts with pervasively high societal cynicism scores, rare prosocial behavior and widespread antisocial behavior, cynical beliefs about human nature are not associated with lower income, but may—in extreme cases—even prove advantageous.

Might our findings be explained by some methodological issues, such as a relative underreporting of income by cynical individuals? There are a number of reasons to believe this to be rather unlikely. First, prior research has shown income report bias in surveys to be minimal. For instance, Judge et al. (1995) found only a 1% difference between executives' self-reported salary and archival records. Second, different modes of data collection were used across the studies we presented (phone interviews in Study 1; face-to-face interviews in Studies 2, 4, and 5; and a combination of mail, face-to-face and phone interviews in Study 3). Our results were consistent across the studies, suggesting that methodological artifacts were unlikely to have driven our results. Third, given cynical individuals' suspiciousness and fear of exploitation, they might have had a higher motivation to conceal their true income from the researchers. However, in none of the surveys were income questions compulsory, and participants' remuneration did not hinge on the number of questions answered. Thus, if (cynical) respondents did not want to report their income they were free to do so. Finally, could cynical individuals be more likely to underreport their income as a show of self-deprecation given their tendency to have lower self-esteem? The results of Study 1 showed that the effect of cynical beliefs on income is robust against controlling for individual differences in self-esteem, suggesting that this alternative explanation is also rather unlikely. Taken together, these analyses provide tentative evidence that our results are unlikely to be explained by some methodological artifacts pertaining to individual difference in income reporting. Nevertheless, we strongly encourage future research to explore whether personality traits (including cynical beliefs) can trigger

particular income reporting biases by combining analyses involving self-reported income with those involving archival records of income.

It is important to note that the effect sizes reported in the present article, although relatively small, reflect longitudinal rather than concurrent relationships. We controlled for the past levels of income (autoregressive or stability effects) to predict its change over time; this approach makes the existing guidelines regarding the interpretation of effect sizes misleading (Adachi & Willoughby, 2014). In contrast, the importance of the effect of cynicism can be appreciated by considering the figures. For example, Figure 1 demonstrates that the least cynical individuals' estimated *monthly* gross income increased by approximately €240 (approximately \$300) after 9 years of observation. In contrast, the most cynical participants did not experience any significant increases in income throughout this period of time.

More important, although countries obviously differ in their levels of pro- and antisocial behavior, we certainly do not assume that "human nature" is intrinsically good in some countries and evil in others. Explaining cross-national differences in prosocial and antisocial behavior represents an interesting and important endeavor that has already attracted some research attention. For example, Henrich and colleagues (Henrich et al., 2005, 2010) studied sharing behavior in economic games in 15 small-scale societies and showed that societies with a high degree to which economic life depends on cooperation with nonimmediate kin showed higher fairness levels in ultimatum game offers. This finding was presumably because fairness and reciprocity are crucial for market exchanges. Similarly, Brosig-Koch, Helbach, Ockenfels, and Weimann (2011) have shown that people in the former East Germany shaped by a history of communism displayed less solidarity behavior in a solidarity game compared with their counterparts in the former West Germany that was spared from communism. Alternatively, following the idea of the pyramid of needs in humanistic psychology (Maslow, 1943), national poverty may contribute to a stronger self-interest as a means to satisfy one's survival needs; in contrast, with increasing national wealth, other (rather than self) concern might be more important. In fact, the cultural dimension of the survival values (i.e., importance of physical and financial security) is one of the strongest predictors of societal cynicism (Bond, Leung, Au, Tong, De Carrasquel, et al., 2004). One can also speculate that cross-national differences regarding the ways societies reward good and punish evil might explain the variations in pro- and antisocial behavior. In fact, countries with good governance, reflected in a strong and effective rule of law (a quality of contract enforcement, property rights, the police, and the courts) and a strong control of corruption tend to have lower homicide rates ($r(44) = -.52, p < .001$ and $r(44) = -.54, p < .001$, respectively) and higher rates of prosocial behavior ($r(41) = .77, p < .001$ and $r(41) = .82, p < .001$, respectively; governance indicators taken from Kaufmann, Kraay, & Mastruzzi, 2007, own calculations).

Whereas the focus of the present research delineated the causal path from cynicism to income, the reverse path is very plausible as well. Research on cynical hostility has shown that it is positively associated with the frequency of experienced economic hardship throughout life, family SES and recalled childhood poverty (Gump, Matthews, & Räikkönen, 1999; Lynch, Kaplan, & Shema,

1997). Similarly, particular life experiences, such as a negative family environment or economic hardship, may strengthen cynical beliefs about human nature throughout life. Specifically, financially disadvantaged people may be prone to attributing their situation to others' malignity, which may in turn preclude them from cooperative alliances and further worsen their financial situation, leading to a downward spiral of cynicism and economic failure. Research in the domain of values and beliefs (Goodwin et al., 2012) suggested that beliefs might actually change because of life transitions or important life events. We encourage future research to explore which type of life events (e.g., being laid-off, betrayed by a friend, losing investments in a recession, or unexpectedly benefitting from one's good will, etc.) is likely to induce changes in individuals' cynical beliefs about human nature.

A limitation of the present studies is that given the nature of our data and methods, we could not readily examine the exact proximate mechanisms by which cynical individuals come to earn less than their less cynical counterparts. We proposed that cynicism might be related to specific behavioral patterns resulting in lower earnings, such as forgoing cooperation, overinvesting in protecting oneself from exploitation or avoiding asking for help. Whereas we endorsed a very broad perspective in the present research, a more focused exploration of these different processes represents a promising avenue for future research. For example, longitudinal studies in organizational contexts as well as social network studies might be helpful in uncovering at least some of the processes by which cynical individuals come to earn less. Additionally, lab studies might provide a more detailed view by allowing an examination of the effect of cynical beliefs on one's earnings in economic games in different contexts (e.g., with high vs. low levels of cooperation).

More important, even in countries with low rates of prosocial and high rates of antisocial behavior, cynical beliefs were not related to a higher income (with an exception of Macedonia). Therefore, overcoming cynical beliefs and building faith in humanity can help us enhance our financial well-being (by reaping the fruits of mutual cooperation and joint efforts) under most circumstances and, even in the few sociocultural contexts that entail a heightened risk of deception and fraud, is unlikely to seriously damage our economic prosperity.

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