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STEM or Humanities? Toward a Balance of Interest Fit

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Despite a growing number of studies demonstrating the importance of fit between interests and major/career, an increasing discordant rhetoric can be heard emphasizing either STEM or the humanities in education and work. We propose that perception of interest fit is more important than the domain itself *per se*. Analysis of a national data set of college graduates ($N = 8,151$) shows that interest fit accounted for more variance in well-being outcomes (work satisfaction, life satisfaction, and financial satisfaction) as compared to STEM or humanities education, and an equivalent amount of variance was found in personal income. Similar trends were found in a second data set of recent college graduates from a Midwest public university ($N = 636$). Even controlling for ability-related variables and personality, interest fit accounted for more variance in work satisfaction and life satisfaction, an equivalent amount of variance in financial satisfaction, and less variance in personal income. These results reveal that it is important to achieve a balanced approach to education and career guidance where individuals can be directed to careers that capture their interest.

Keywords: STEM, humanities, interest fit, well-being, income

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INTRODUCTION

With rapid technological and scientific advances and a growing demand for modernization, a stronger emphasis has been placed on science, technology, engineering, and mathematics (STEM) majors and careers. Between 2009 and 2013, the percentage of students graduating with science and engineering degrees increased by 20% (Tizon, 2013), while the percentage of those graduating with degrees in the humanities decreased (Humanities Indicators, 2017). In addition, the 2016 United States President's budget for STEM education increased to $3 billion with little investment in humanities education (Office of Management Budget, 2016). A growing number of elected officials are also advocating for the elimination of state funding for students majoring in humanities (Kiley, 2013; Beam, 2016; Cohen, 2016). In response, arts and humanities institutions are reacting to these trends by highlighting the values of the arts and humanities to societies and for individuals. For instance, a report by the American Academy of Arts Sciences (2013) claimed that the humanities "go beyond the immediate and instrumental to help us understand the past and future…They are critical to our pursuit of life, liberty, and happiness" (p. 13). The Stanford Humanities Center (2017) also asserts that "through exploration of the humanities, we learn how to think creatively and critically, to reason, and to ask questions." In doing so, they also rely on recent studies indicating that the majority of hiring managers believe candidates' soft skills (e.g., communication skills, critical thinking, and intercultural skills), which are considered inherent in a humanities education at the highest level, are more important than their major

(Association of American Colleges and Universities, 2013) and as important as their technical skills (Bentley University, 2014). The rhetoric from proponents of each field reinforces the idea that either STEM or humanities careers would provide higher values to individuals and societies when compared to the other.

While these ongoing and opposing discourses may be helpful, we propose that a unilateral approach from either perspective may limit our understanding of the value that STEM or the humanities provide to individuals and that it is important to consider these benefits in light of each individuals' unique set of interests. In other words, we argue that it is not the choice of major or educational track (i.e., STEM vs. humanities) *per se*, but whether individuals' interests are congruent with the major or occupation that leads to enhanced individual outcomes. Accordingly, such a person-centered approach suggests that the perception of fit between individuals' interests and their major or occupation is a more important indicator of future gains than the rewards promised by their major field of study.

Such a proposal is in line with past career theories (e.g., Holland's theory of career choice), suggesting that the fit between the individual's values, interests, and abilities and his/her career is a major determinant of success and satisfaction (Campbell and Holland, 1972; Spokane et al., 2000; Nauta, 2010). The premise of these theories is that individuals thrive and flourish in environments that are congruent with their interests, values, and abilities (Meir, 1989). Empirical studies also suggest that the congruence or fit between individuals' interests, and their environment not only relates to higher levels of performance, persistence, and career success (Terence and Robbins, 2006; Nye et al., 2012, 2017; Rounds and Su, 2014) but also results in better well-being outcomes for individuals (Assouline and Meir, 1987; Tsabari et al., 2005). Studies also suggest that when students can relate course materials to their own lives, they have higher motivation and performance in class (Hulleman and Harackiewicz, 2009). Accordingly, we argue that the person-centric perspective in major and occupational choice may be more important than a top-down directive of channeling students to STEM careers or conversely to careers in the humanities.

In view of this, our goal is to examine how the fit between personal interests and job compares with STEM or the humanities educational track in explaining a variety of well-being and economic outcomes. While proponents of STEM majors rely heavily on the economic advantages of STEM degrees, we argue that such an emphasis on solely economic outcomes may omit or even mislead what is valued by individuals and societies (Diener and Seligman, 2004); therefore, a broader metrics of human well-being should be considered. While personal income is positively linked to emotional and cognitive well-being, research has shown that there is satiation point, beyond which limited gain or even lower life evaluation is reported (Jebb et al., 2018). Well-being metrics expand our notions of societal progress beyond economic outcomes and reflect additional valued qualities such as psychological health, participation in democracy, and respect for human rights (Diener and Seligman, 2004; Helliwell et al., 2015).

Accordingly, we seek to understand the extent to which congruence between individuals' interests and their occupation is important and predictive of important well-being outcomes (i.e., work satisfaction, life satisfaction, financial satisfaction, and personal income) as compared to STEM or humanities educational track. While we expect that major field to be a stronger predictor of personal income, we expect perception of interest fit to be more important with regard to other well-being outcomes (namely, work satisfaction, life satisfaction, and financial satisfaction). As such, we hypothesize that:

Hypothesis 1: Educational track is a more important predictor of personal income than interest fit
Hypothesis 2: Interest fit is a more important predictor of well-being outcomes (i.e., work satisfaction, life satisfaction, and financial satisfaction) than educational track.

METHOD

Study 1 Sample

We used data from 8,151 college-educated employed adults from the United States as surveyed in the Gallup-Purdue Index (GPI) since 1985. Participants were on average male (58%), Caucasian (91%), and married (68%). College graduates self-reported their major field. These fields were then coded based on whether they were humanities or STEM. College outcomes included economic markers of collegiate success (i.e., income) and well-being metrics as measured by the Gallup-Healthways Well-Being Index (i.e., work satisfaction, life satisfaction, and financial satisfaction). Detailed information about the operationalization of variables is included in the **Supplementary Materials**. Bivariate correlations among study variables are reported in **Supplementary Table 1**.

Study 2 Sample

One concern in the first study is that individuals' personality and ability level may confound with perception of interest fit. To address this, we used a sample of 636 employed, recent graduates from a large Midwestern university utilizing the GPI and controlled for the influence of individuals' personality (Big Five) and ability levels (SAT and GPA). Participants were, on average, male (51%), Caucasian (88%), and unmarried (81%). Detailed information about the operationalization of variables is included in the **Supplementary Materials**. Bivariate correlations among the study variables are reported in **Supplementary Table 2**.

Analysis

Multiple regression was used to examine the influence of major choice and interest fit on each well-being outcome, while controlling for demographic and individual characteristics. Multiple regression is appropriate for this study as it examines whether a set of independent variables significantly predicts the outcome of interest. Here, we report unstandardized coefficients (*b*), which represent how much the outcome variable would change with a 1-unit change in the independent variable. We inspected various residual plots to examine the assumptions of multiple regression, including normality, homoscedasticity, no autocorrelation of residuals, and no multicollinearity among

predictors. These plots indicated that these assumptions were met for both samples.

While regression analysis is a powerful tool to examine whether a variable predicts the outcome, it does not inform us about the relative contribution of a variable in predicting the outcome compared to the other variables in the model. Given that we are interested in exploring the most important predictors of well-being outcomes, we also conducted relative weight analysis (RWA; Johnson and Lebreton, 2004; Tonidandel and LeBreton, 2015). RWA decomposes the predicted variance in a regression model into weights that indicate the relative contribution of the predictor variables. Here, we report rescaled relative weights (RS-RW) which represent the weights as the percentage of explained variance. For example, an RS-RW of 50% means that the predictor accounts for 50% of the explained variance in the outcome.

RESULTS

Study 1 Results

Controlling for demographic factors, we examined whether interest fit can predict well-being outcomes above and beyond the major field (**Table 1**). The results of the regression analysis indicated that, STEM majors had higher levels of personal income ($b = 0.28$, $p < 0.001$), and slightly higher levels of life satisfaction ($b = 0.06$, $p < 0.001$). On the other hand, perception of interest fit was a significant and positive predictor of all well-being and financial outcomes, suggesting that those who experienced more fit between their job and their interests not only reported higher levels of work satisfaction ($b = 0.62$, $p < 0.001$), but also higher levels of life satisfaction ($b = 0.57$, $p < 0.001$), financial satisfaction ($b = 0.04$, $p < 0.001$), and personal income ($b = 0.29$, $p < 0.001$). The results also indicated that the interaction between interest fit and major was only a significant predictor of work satisfaction ($b = 0.04$, $p < 0.001$), such that the effect of interest fit on work satisfaction was stronger for STEM majors ($b = 0.65$, $p < 0.001$) compared to those in the humanities ($b = 0.58$, $p < 0.001$). Interaction plot (**Supplementary Figure 1**) and regions of significance analysis suggested that when the perception of fit is high, there is no difference in work satisfaction of STEM majors compared to humanities; however, when the fit is low, individuals with STEM majors have lower work satisfaction compared to those in the humanities.

The results of the RWA analysis (**Supplementary Figure 2**) indicated that perception of interest fit accounted for 87, 50, 23, and 10% of the explained variance for work satisfaction, life satisfaction, financial satisfaction, and personal income, respectively. In addition, while the percentage of variance in personal income accounted by interest fit was not significantly different from that of major field, interest fit was a more important predictor compared to the major field in explaining work satisfaction, life satisfaction, and personal satisfaction (**Table 1**). These results provide partial support for hypotheses 1 and 2.

Study 2 Results

The results of the regression analysis (**Table 2**) suggested that even after controlling for cognitive ability and ability/motivation, perception of interest fit was a significant predictor of work satisfaction ($b = 0.53$, $p < 0.001$), life satisfaction ($b = 0.35$, $p < 0.001$), and financial satisfaction ($b = 0.07$, $p <$

TABLE 1 | Regression results and relative weight analysis predicting well-being outcomes (Study 1).

	Work satisfaction		Life satisfaction		Financial satisfaction		Personal income	
	b	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW
Gender (Female =1)	0.02	0.02[a]	0.13*	0.39[a]	0.04*	7.97*	−1.03*	36.17*[a]
Race (White = 1)	0.08*	0.22[a]	−0.01	0.05[a]	0.01	0.04[a]	−0.16	0.16[a]
Marital status (Married = 1)	0.10*	1.55*[a]	0.60*	16.93*[a]	0.04*	5.50[a]	0.04	2.15*[a]
Father education	0.01	0.05[a]	−0.01	0.20[a]	0.01*	6.85*[a]	0.01	0.09[a]
Mother education	−0.001	0.03[a]	0.01	0.20[a]	−0.001	2.33[a]	0.01	0.18[a]
Student loans (Square Root)	0.000*	0.81*[a]	−0.001*	4.70*[a]	0.000	2.06[a]	0.000	1.68*[a]
Years since graduation	0.01*	2.06*[a]	0.02*	11.05*[a]	−0.004*	14.90*	0.01*	10.24*
Years since graduation (Qu)	0.000*	0.58*[a]	0.000*	1.18*[a]	0.000	0.91[a]	−0.001*	14.10*
Years since graduation (Cu)	0.000	1.38*[a]	0.000	8.55*[a]	0.000	5.23*[a]	0.000*	10.79*
Academic mentoring	0.01	2.33*[a]	0.09*	3.47*[a]	0.02*	12.90*	−0.12*	1.67*[a]
Extracurricular involvement	0.002	0.57*[a]	0.03*	1.29*[a]	0.02*	17.87*	0.08*	1.74*[a]
Major field (STEM = 1)	0.001	0.08[a]	0.06*	0.77*[a]	−0.001	0.16[a]	0.28*	11.10*
Interest fit	0.62*	86.93*	0.57*	50.19*	0.04*	22.87*	0.29*	9.54*
Interest fit × Major field	0.04*	3.40*[a]	−0.01	1.05*[a]	−0.002	0.40[a]	0.03	0.38[a]
R^2	0.37		0.26		0.02		0.12	

N = 8,151. RS-RW, Rescaled Relative Weight. [a]The predictor's RS-RW is significantly different from that of Interest Fit.
**p < 0.05.*

TABLE 2 | Regression results and relative weight analysis predicting well-being outcomes (Study 2).

	Work satisfaction				Life satisfaction				Financial satisfaction				Personal income			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW	*b*	RS-RW
Gender (Female = 1)	−0.01	0.18[a]	0.03	0.23[a]	0.19*	0.83[a]	0.27	2.41[a]	−0.19*	8.04*	−0.12*	6.13*	−0.72*	27.29*[a]	−0.47*	13.63*[a]
Race (White = 1)	−0.03	0.03[a]	0.07	0.23[a]	−0.16	0.86[a]	0.06	0.15[a]	−0.14*	1.27*[a]	−0.08	0.78[a]	−0.21	0.59	0.13	0.16
Marital status (Married = 1)	0.07	0.63[a]	0.09	1.17[a]	0.55*	10.66*	0.36	4.95*[a]	0.06	0.55[a]	0.09	1.77	0.13	1.80*	−0.004	0.32
Father education	0.005	0.50[a]	0.002	0.51[a]	−0.02	0.35[a]	0.02	1.10[a]	0.01	3.19*	0.03	4.96*	0.07*	2.38*	0.12*	6.35
Mother education	0.01	0.13[a]	0.02	0.34[a]	0.05	0.75[a]	−0.01	0.18[a]	0.03*	3.54*	0.03	3.46*	0.03	0.71	0.01	1.15
Student loans (Square Root)	0.00	0.09[a]	0.000	0.06[a]	−0.002*	7.31*[a]	−0.002*	7.43*[a]	−0.002*	40.24*[a]	−0.002*	26.95*[a]	0.000	0.14	0.001	1.59
Years since graduation	0.02	0.33[a]	0.09	0.52[a]	0.05	0.98[a]	0.17	2.05[a]	−0.02	0.61[a]	0.05	0.30[a]	0.23*	6.61*[a]	0.06	1.22
Years since graduation (Qu)	−0.001	0.19[a]	−0.01	0.56[a]	0.01	0.15[a]	−0.11	1.14[a]	0.01	0.57[a]	0.02	0.41[a]	−0.004	0.18	−0.23*	1.77
Years since graduation (Cu)	−0.01	0.67[a]	−0.02	0.77[a]	−0.001	0.49[a]	−0.06	1.44[a]	0.000	0.56[a]	−0.003	0.54[a]	−0.02	2.97*	−0.07*	1.33
Academic mentoring	−0.04	0.98*[a]	−0.04	1.87*[a]	−0.001	4.47*[a]	0.01	4.10*[a]	−0.04	1.25*[a]	−0.02	1.06[a]	−0.28*	4.23*	−0.27*	2.92
Extracurricular involvement	0.01	0.91[a]	0.01	0.86[a]	0.03	2.64*[a]	0.03	2.34[a]	0.03*	3.16*	0.001	1.15	0.06	1.90*	0.07	3.28
Social support in college	0.15*	3.40*[a]	0.25*	5.60*[a]	0.39*	11.55*	0.36*	9.13*	0.16*	6.39*	0.17*	5.24*	0.32*	2.95*	0.34*	2.79
Extroversion	0.02	0.96*[a]	0.04	0.89[a]	0.10*	3.45*[a]	0.19*	6.48*[a]	0.01	0.19[a]	0.02	0.26[a]	0.07	0.87	0.07	0.76
Agreeableness	−0.03	1.04*[a]	−0.02	0.66[a]	−0.06	1.97*[a]	−0.05	1.58[a]	0.04	0.66[a]	0.04	0.87[a]	0.23*	8.07*[a]	0.18*	5.14
Conscientiousness	0.07*	3.00*[a]	0.07	3.30*[a]	0.22*	6.98*[a]	0.33*	11.43*	0.04	0.99*[a]	0.04	0.60[a]	0.12*	0.97	0.06	0.52
Neuroticism	−0.10*	4.50*[a]	−0.14*	5.92*[a]	−0.24*	8.80*[a]	−0.10	3.16[a]	−0.13*	10.49*	−0.12*	9.02*	−0.17*	7.88*[a]	−0.15	6.55
Openness to experience	−0.05	0.13[a]	−0.13*	0.93[a]	−0.03	0.23[a]	−0.04	0.26[a]	−0.06*	1.58*[a]	−0.07	2.93*	0.08	0.39	0.09	0.44
SAT math			0.001	1.78*[a]			0.001	0.55[a]			0.002*	17.52*[a]			0.004*	19.19*[a]
SAT verbal			0.000	0.23[a]			−0.001	0.37[a]			−0.001*	2.15*			−0.002	2.17
Collegiate GPA			−0.12	0.38[a]			−0.06	0.93[a]			−0.04	0.89[a]			0.11	1.36
Work in major	−0.07*	2.26*[a]	−0.06	3.97*[a]	0.14*	5.29*[a]	0.04	3.52[a]	0.08*	4.17*	0.04	3.09*	0.32*	10.79*[a]	0.28*	9.47*
Major field (STEM = 1)	0.01	0.68[a]	−0.03	0.41[a]	0.17*	2.85*[a]	0.15	1.83[a]	0.10*	4.91*	0.04	2.65*	0.41*	17.19*[a]	0.32*	14.81*[a]
Interest fit	0.52*	64.57*	0.53*	54.68*	0.27*	20.38*	0.35*	24.55*	0.08*	6.27*	0.07*	5.82*	0.003	1.50*[a]	0.05	2.62
Interest fit × Major field	−0.03	14.80*[a]	0.001	14.14*[a]	0.09	9.01*[a]	0.07	8.91*	−0.001	1.37*[a]	−0.002	1.46[a]	0.05	0.59	−0.005	0.44
R^2	0.38		0.46		0.26		0.29		0.32		0.36		0.22		0.24	
N	1,533		555		1,166		411		1,539		555		1,506		543	

RS-RW, Rescaled Relative Weight. [a] *The predictor's RS-RW is significantly different from that of Interest Fit.*
**p < 0.05.*

0.05), but not personal income ($b = 0.05$, $p > 0.05$). On the other hand, as expected, major field was only a significant predictor of personal income ($b = 0.32$, $p < 0.01$), but not work satisfaction, life satisfaction, or financial satisfaction. No significant interaction between interest fit and the major field was found.

RWA analysis (**Supplementary Figure 3**) suggested that interest fit accounts for 55, 24, 6, and 3% of the explained variance for work satisfaction, life satisfaction, financial satisfaction, and personal income, respectively. In addition, interest fit accounted for significantly more variance in work satisfaction and life satisfaction, compared to the major field. Further, while the major accounted for more variance (15%) in personal income compared to interest fit (3%), the two did not differ in importance in explaining financial satisfaction (3 and 6%, respectively). These results provide partial support for hypotheses 1 and 2.

DISCUSSION

While there has been a growing desire to channel and groom more young individuals to move into STEM careers, proponents of the humanities have challenged this idea. The struggle for dominance between the two different types of educational and occupational tracks, however, misses out on the broader question of whether individuals themselves are fundamentally interested in the material at hand. Therefore, the purpose of this study was to examine a person-centric approach in occupational choice rather than a top-down unilateral channeling of individuals into these fields. Below, we discuss the implications of our study along with its limitations.

Study Implications

Our results suggest that while majoring in STEM fields may result in slightly higher levels of personal income, the perception of fit between individual's interests and his/her job also plays a significant role in personal income and a more important role in their well-being. In other words, while financial metrics of personal income point to an advantage for STEM majors, human well-being metrics are mainly a function of the individual's perception of fit, and lack of fit may result in lower well-being independent of the major field of study. These findings are in line with the data reporting that STEM careers offer a considerable salary premium over non-STEM jobs (BurningGlass, 2013). However, research also suggests that income is not linearly related to well-being indices such as emotional well-being and that there is a satiation point, after which limited gain or even lower evaluation is observed (Jebb et al., 2018). A meta-analysis of the relationship between interest-based job fit and job satisfaction also suggests that perception of fit is more strongly related to satisfaction with supervisor, coworkers and work in general compared to satisfaction with pay and promotion (Morris, 2003). In line with this research, our results point to the important role of the match between individuals' interests and their career to their future well-being. That is, for individuals to flourish, the decision to pursue a major (e.g., STEM vs. Humanities) is best to be based on their interests rather than the major's income potential.

We also found that lack of fit may have a more detrimental effect on work satisfaction for those in STEM majors. Although these finding should be treated with caution for a couple of reasons. First, the effect size was very small, and the result was not replicated in Study 2. Furthermore, past research has not examined the differential effect of fit perceptions across majors. Accordingly, future research is needed to further our understanding of why STEM majors may sustain more detrimental outcomes when there is a lack of fit. Given organizational culture is influenced by characteristics of industry (e.g., technology; Chatman and Jehn, 1994), it may be the case that varies organizational culture across industries might be the reason for the differential effect of fit perceptions on well-being outcomes for STEM vs. humanities students. Our research also found that perception of fit is still the most important predictor of well-being outcomes, even after controlling for the individual's personality and ability.

Consistent with prior research (Campbell and Holland, 1972; Spokane et al., 2000; Nauta, 2010), these findings point to the importance of an individual's interests when making decisions about his or her major and future career. What is surprising, however, is that despite the recognition of the importance of fit in prior research, as a society, we are moving toward a climate in which studying in STEM majors are overemphasized, humanities majors are undervalued, and more competent individuals are channeled and pressured into STEM careers. Such channeling, without attention to the perception of fit, may have a detrimental effect on an individual's well-being. Accordingly, as a society, we need to encourage adolescents and youths to make career decision not solely from an economic perspective, but from a broader, and long-term, well-being perspective, so that they can thrive and flourish.

Study Limitations

As with any study, our research has some limitations that should be considered. First, the data used in this research is single-source and cross-sectional in nature, which limits our ability to draw causal conclusions. It may be the case that individuals' interests may shift as they continue to work in a particular setting. Furthermore, individuals may craft their jobs (either cognitively or behaviorally) so that it fits better with their interests (Wrzesniewski and Dutton, 2001). Accordingly, longitudinal research is needed to better understand how interest fit during college would affect future well-being outcomes. Single-source and self-report nature of the data poses some limitations as it increases the possibility of common method variance. While the nature of the constructs included in our study (e.g., well-being outcomes) require self-reports, future research should incorporate others-reported measures in addition to self-reports to further validate our results. Finally,

another limitation of our study is the generalizability of the results. Particularly, Study 2 utilizes a sample of recent college graduates from a large Midwestern university, which is a heavily STEM-focused institution. Thus, these results may not be generalizable to other samples with older participants or students graduating from Liberal Arts institutions. Research with a more diverse sample can establish the generalizability of these results.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from Gallup, but restrictions apply to their availability. The data were used under license for the current study and are not publicly available. The data are, however, available from the authors upon reasonable request and with permission from Gallup.

AUTHOR CONTRIBUTIONS

HV and SP analyzed the data. HV and LT wrote the paper. NB and JP provided critical feedback.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2019.00143/full#supplementary-material

REFERENCES

American Academy of Arts and Sciences (2013). *Humanities* Report *Card*. Available online at: https://www.humanitiescommission.org/_pdf/Hum_Report_Card.pdf (accessed October 17, 2017).

Association of American Colleges and Universities (2013). *It Takes More than a Major: Employer Priorities for College Learning and Student Success*. Available online at: http://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary (accessed October 17, 2017).

Assouline, M., and Meir, E. I. (1987). Meta-analysis of the relationship between congruence and well-being measures. *J. Vocat. Behav.* 31, 319–332. doi: 10.1016/0001-8791(87)90046-7

Beam, A. (2016, January 29). Kentucky Gov. Matt Bevin wants state colleges and universities to produce more electrical engineers and less french literature scholars. *U.S. News*. Available online at: https://www.usnews.com/news/us/articles/2016-01-29/in-kentucky-a-push-for-engineers-over-french-lit-scholars (accessed October 17, 2017).

Bentley University (2014). *The Prepared U Project: An in-Depth Look at Millennial Preparedness for Today's Workforce*. Available online at: https://www.bentley.edu/files/prepared/1.29.2013_BentleyU_Whitepaper_Shareable.pdf (accessed October 17, 2017).

BurningGlass (2013). *Real-Time Insight Into The Market For Entry-Level STEM Jobs and STEM Careers*. Burning Glass Technologies. Available online at: https://www.burning-glass.com/research-project/stem/ (accessed July 14, 2017).

Campbell, D. P., and Holland, J. L. (1972). A merger in vocational interest research: applying Holland's theory to strong's data. *J. Vocat. Behav.* 2, 353–376. doi: 10.1016/0001-8791(72)90012-7

Chatman, J. A., and Jehn, K. A. (1994). Assessing the relationship between industry characteristics and organizational culture: how different can you be? *Acad. Manage. J.* 37, 522–553. doi: 10.2307/256699

Cohen, P. (2016, February 21). A rising call to promote STEM education and cut liberal arts funding. *The New York Times*.

Diener, E., and Seligman, M. E. P. (2004). Beyond money: progress on an economy of well-being. *Psychol. Sci. Public Interest* 5, 1–31. doi: 10.1111/j.0963-7214.2004.00501001.x

Helliwell, J., Layard, R., and Sachs, J. (2015). *World Happiness Report 2015*. New York, NY: Sustainable Development Solutions Network.

Hulleman, C. S., and Harackiewicz, J. M. (2009). Promoting interest and performance in high school science classes. *Science* 326, 1410–1412. doi: 10.1126/science.1177067

Humanities Indicators (2017). *Bachelor's Degrees in the Humanities*. Available online at:https://www.humanitiesindicators.org/content/indicatordoc.aspx?i=34 (accessed October 17, 2017).

Jebb, A. T., Tay, L., Diener, E., and Oishi, S. (2018). Happiness, income satiation and turning points around the world. *Nat. Hum. Behav.* 2, 33–38. doi: 10.1038/s41562-017-0277-0

Johnson, J. W., and Lebreton, J. M. (2004). History and use of relative importance indices in organizational research. *Organ. Res. Methods* 7, 238–257. doi: 10.1177/1094428104266510

Kiley, K. (2013, January 30). Another liberal arts critic: North Carolina governor joins chorus of republicans critical of liberal arts. *Inside Higher Ed*. Available online at: https://www.insidehighered.com/news/2013/01/30/north-carolina-governor-joins-chorus-republicans-critical-liberal-arts

Meir, E. I. (1989). Integrative elaboration of the congruence theory. *J. Vocat. Behav.* 35, 219–230. doi: 10.1016/0001-8791(89)90042-0

Morris, M. A. (2003). *A Meta-Analytic Investigation of Vocational Interest-Based Job Fit, and Its Relationship to Job Satisfaction, Performance, and Turnover*. University of Houston.

Nauta, M. M. (2010). The development, evolution, and status of holland's theory of vocational personalities: reflections and future directions for counseling psychology. *J. Couns. Psychol.* 57, 11–22. doi: 10.1037/a0018213

Nye, C. D., Su, R., Rounds, J., and Drasgow, F. (2012). Vocational interests and performance: a quantitative summary of over 60 years of research. *Perspect. Psychol. Sci.* 7, 384–403. doi: 10.1177/1745691612449021

Nye, C. D., Su, R., Rounds, J., and Drasgow, F. (2017). Interest congruence and performance: revisiting recent meta-analytic findings. *J. Vocat. Behav.* 98, 138–151. doi: 10.1016/j.jvb.2016.11.002

Office of Management and Budget (2016). *Budget of the U.S Government: Fiscal Year 2016*. Available online at: https://www.gpo.gov/fdsys/pkg/BUDGET-2016-BUD/pdf/BUDGET-2016-BUD.pdf (accessed November 6, 2017).

Rounds, J., and Su, R. (2014). The nature and power of interests. *Curr. Dir. Psychol. Sci.* 23, 98–103. doi: 10.1177/0963721414522812

Spokane, A. R., Meir, E. I., and Catalano, M. (2000). Person–environment Congruence and Holland's theory: a review and reconsideration. *J. Vocat. Behav.* 57, 137–187. doi: 10.1006/jvbe.2000.1771

Stanford Humanities Center (2017). *Why Do the Humanities Matter?* Available online at: http://shc.stanford.edu/why-do-humanities-matter

Terence, T. J. G., and Robbins, S. B. (2006). The interest-major congruence and college success relation: a longitudinal study. *J. Vocat. Behav.* 69, 64–89. doi: 10.1016/j.jvb.2005.11.003

Tizon, C. (2013). *Growth in Science and Engineering (SandE) Bachelor's Degrees by Gender Between 2009-2013*. Available online at: http://nscresearchcenter.org/snapshotreport-degreeattainment3/#more-2111

Tonidandel, S., and LeBreton, J. M. (2015). RWA web: a free, comprehensive, web-based, and user-friendly tool for relative weight analyses. *J. Bus. Psychol.* 30, 207–216. doi: 10.1007/s10869-014-9351-z

Tsabari, O., Tziner, A., and Meir, E. I. (2005). Updated meta-analysis on the relationship between congruence and satisfaction. *J. Career Assess.* 13, 216–232. doi: 10.1177/1069072704273165

Wrzesniewski, A., and Dutton, J. E. (2001). Crafting a job: revising employees as active crafters of their work. *Acad. Manage. Rev.* 26, 179–201. doi: 10.5465/amr.2001.4378011

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