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Majoring in Selection, and Minor in Socialization: The Role of the College Experience on
Goal Change Post High School

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Abstract

Objective: Though it is frequently assumed that the college experience can influence our life goals, this claim has been relatively understudied. The current study examined the role of goals on college major selection, as well as whether major selection influences later goal change. In addition, we examined whether a person's perceptions of his or her peers' goals influences goal-setting. *Method:* Using a sample of German students ($M_{\text{age}} = 19$ years, $n = 3023$ at Wave 1), we assessed life goal levels and changes from high school into college across three assessment occasions. Participants reported their current aspirations, along with the perceived goals of their peers during the college assessments. *Results:* Using latent growth curve models, findings suggest that life goals entering college significantly predict the majors students select. However, this major selection had limited influence on later changes in life goals. Stronger effects were found with respect to perceptions of peers' goals, with students tending to change their goals to better align with their peers. *Conclusions:* The current study provides evidence that life goals are relatively stable and yet can change during the emerging adult years, in ways that demonstrate the potential influence of the college experience.

Keywords: life goals, emerging adulthood, college, majors, goal change

One of the best ways to know where people are going is to ask them about their goals for life. Indeed, life goals serve to organize and manage an individual's more proximal daily or short-term goals (e.g., Austin & Vancouver, 1996; McKnight & Kashdan, 2009). Given the importance of life goals for directing one towards career and family ambitions, it is unsurprising that researchers have tended to focus on how these goals change during emerging and young adulthood (see e.g., Hill, Jackson, Roberts, Lapsley, & Brandenberger, 2011; Lüdtke, Trautwein, & Husemann, 2009; Roberts, O'Donnell, & Robins, 2004). A commonality in this work is its focus on college student samples, given the capacity for this context to influence students' interests and career pursuits; that said, it is infrequently the case that individuals have examined the college experience itself as a potential outcome and influence on goal-setting during emerging adulthood.

The current study adds to this literature by examining the interplay between life goal development and the college experience, building upon previous work with this sample (Lüdtke et al., 2009). Specifically, we addressed two primary research questions of interest. First, what role do life goals play in predicting how individuals shape their college experience in the form of selecting a major? In other words, how do our life goals help us select a college major? Second, how does the selection of a college major influence life goal change? Toward this second aim, we examined two potential mechanisms, which can be viewed as socialization effects, or influences on goal change related to adherence to the present expectations or norms. On one hand, individuals in a major are likely to increase on life goals related to that major because of the tangible activities they engage in, such as studying topics related to their goals. Alternatively, students may shift their goals to be similar to the norms for goals that other students hold in their

major. In addressing these two primary research questions, the current study also advances the field by describing the developmental trajectories in life goals from the period from high school graduation to four years into college.

Emerging Adulthood as a Catalyst for Goal Development

Researchers have suggested the need to examine the years between high school and full adult status, known as emerging adulthood, separately from the adolescent or adult years given the unique nature of this developmental period (e.g., Arnett, 2000). One of the reasons for this distinction is that most individuals use this period to formalize their commitments and views with respect to the life domains of work and relationships. Accordingly, this period presents with distinctive challenges and expectations, and the method by which emerging adults deal with these demands may be uniquely reflected in their life goal endorsements.

Life goals can be defined as “a person’s aspirations to shape his or her context and establish general life structures such as having a career, a family, and a certain kind of lifestyle” (Roberts et al., 2004, p. 542). Given the clear linkage to the typical challenges faced by emerging adults, multiple studies have now examined how life goals change during this developmental period (Hill et al., 2011; Roberts et al., 2004; Lüdtke et al., 2009). These studies often support three general conclusions regarding life goal development during emerging adulthood. First, emerging adulthood is a period of increasing goal specification and selection, rather than widespread endorsement and exploration (Roberts et al., 2004; Lüdtke et al., 2009). That is to say, most goal endorsements go down as young people move through emerging adulthood. Such mean-level declines are supportive of theories that posit the need for individuals to focus their energies during adulthood, rather than trying to strive toward all life goals at once (see e.g., Selection-Optimization-Compensation theory; Baltes, 1997; Freund & Baltes, 2002).

Second, life goal change is predictable and co-occurs with other aspects of personality development. Indeed, studies suggest that emerging adults change their life goals in ways that coincide with how they develop with respect to their personality traits (Roberts et al., 2004; Lüdtke et al., 2009). For instance, individuals who become more extraverted often place greater emphasis on life goals related to relationships and community engagement (Lüdtke et al., 2009). In other words, life goal changes appear to not be random, but rather coincide systematically with other aspects of personality development.

Third, life goal changes during this period appear to be particularly meaningful with respect to later well-being and adaptive development. For instance, one study assessed participants' life goals during freshman and senior year of college, as well as multiple measures of well-being at age 35 (Hill et al., 2011). In that study, goal changes during the four-year span of college predicted adult well-being, even when controlling for initial goal levels, as well as how individuals changed their life goals after college. Specifically, individuals who placed greater importance on goals related to prosocial and occupational aims, two aims presumptively beneficial for the transition to adulthood, tended to fare better as adults than their counterparts. In sum, individuals change their life goals during emerging adulthood in order to focus on their most desired aims.

The need to study emerging adulthood largely grew out of the increasingly normative tendency to attend college in post-industrial societies (Arnett, 2000; 2004), which allows for an extended identity development; as such, the college experience can be viewed as a primary context for emerging adult development. Not surprisingly, life goal studies have frequently employed college samples to study goal changes (Hill et al., 2011; Lüdtke et al., 2009; Roberts et al., 2004), and how life goals influence major life transitions (e.g., Nurmi & Salmela-Aro, 2002;

Salmela-Aro & Nurmi, 1997). Accordingly, the collegiate experience appears a plausible influence on life goal change. And yet, identifying the predictors and mechanisms for these changes remains an understudied topic. Toward this end, we examined two possible influences on life goal change resulting from choosing a major: (1) a major-congruence effect, where individuals change in the direction of goals relevant to the major and (2) a peer-congruence effect, where individuals change in the direction of goals shared by their peers. These two possibilities underscore how, just as your life goals will direct you toward a college major, your choice of major may channel your life goal development.

Major-Congruence Effect

Upon choosing a major, students should be motivated to maintain or increase their perceived importance for life goals relevant to the major. One method for testing this claim is to evaluate whether and how life goals change following this selection process. For instance, for any life goal domain that predicts who enters a given major, students within that major should maintain or increase their emphasis of these presumptively major-relevant goals, which would be consistent with the corresponive principle (Roberts & Wood, 2006). Medical majors should view health goals as more important, while economics majors should rate financial goals as increasingly important. Following a Selection-Optimization-Compensation theory framework (Baltes, 1997; Freund & Baltes, 2002), students should focus on those life goals related to their major, while decreasing their importance of major-irrelevant goals.

The Influence of Fellow Majors

Selecting a college major also may influence life goal development by virtue of placing students of like majors together, based on work underscoring the potential role for peers on personality development (see for a review, Reitz, Zimmerman, Hutteman, Specht, & Neyer,

2014). For the current purposes, it is important to consider peers' goals for at least two different reasons. First, students will spend more time with individuals in their major than those outside of it. Students will have more classes with fellow majors, given their similar degree requirements, and are more likely to work outside of class with these individuals. As such, students may rely upon their perceptions of their peers' goals to construct their subjective norm for a given behavior, and following work on the role of social influence (see e.g., Ajzen, 1991; Armitage & Conner, 2001), students should act in ways that bring them more in line with their perceived norm for their in-group. Second, an alternative method for addressing this point is to examine the role of the peers' actual goals. A common theme in research on person-environment fit is the need to examine the effect of perceived and "actual" norms for a given behavior or belief (see Roberts & Robins, 2004). Examining the role of both actual and perceived ones allows researchers to better understand whether individuals are influenced more by what they perceive their environment to be, or the more objective environmental status.

Following these possibilities, we examined two potential influences related to students in a given major. First, a *subjective peer perception effect* would be evidenced if participants' goal changes were predicted by what goals they perceived their fellow students to hold. Second, we examined a *normative peer congruence effect*, which reflects the extent to which one's goals are consistent with the aggregate goal level held by all other students in one's major. Greater congruence with the normative pattern would reflect an index of fit with the norms held by the larger population of students and could also predict developmental changes in goals over time. To an extent, these two influences provide initial insights into socialization effects with respect to both subjective peer norms and more objective peer norms on goal-setting during college.

Current Study

The current study examined life goal development across three waves of a longitudinal study, by asking students about their goals during the final year of high school (T1), and reassessing these participants two (T2) and four years (T3) following high school graduation. Accordingly, we were able to examine goal changes from their initial pre-college levels through two assessments during college attendance. In addition to reporting on their own goals, students reported on their selected college major at T2 as well as the perceived goals of their like-major peers. Using this data structure, we first tested whether life goal levels at T1 predicted college major selection at T2, in line with expectations that life goal commitment imbues a direction for life (Hill et al., 2010). Next we examined whether students' major field, a proxy for the students' academic environment, influenced life goal development in two different ways. First, we predicted that students should retain their perceived importance for major-relevant life goals, while reducing the importance of less relevant ones. Second, students may be likely to change their goals either to be in line with their perceptions of fellow peers (peer perception effect) or to reduce discrepancy with the actual norms for students in that major (peer congruence effect).

Across these questions, we focus on a goal taxonomy similar in content to other classification schemes in the literature (e.g., Lüdtke et al., 2009; Kasser & Ryan, 1996; Roberts et al., 2004), and largely aligned with the work on self-determination theory (e.g., Kasser & Ryan, 1996). Specifically, we examined eight different domains that reflect more self-interested foci (image, popularity, hedonism), other-focused interests (affiliation, community contribution), as well as personal well-being and success (financial success, personal growth, and health). In so doing, we sought not only to capture the prominent goal domains mentioned in the life goal literature, but also those that provide clear connections to the students' majors. For instance, one would anticipate social sciences majors might place greater importance on goals focused on

others (e.g., affiliation, community), whereas medical majors should be more focused on health-related goals.

Method

Participants

Participants were drawn from the Transformation of the School System and Academic Careers Study (TOSCA; Trautwein, Neumann, Nagy, Lüdtke & Maaz, 2010), an ongoing study designed to examine the interplay of individual and institutional opportunity structures and their effects on a broad range of psychological and educational outcomes, such as academic growth, self-concept, and well-being from a longitudinal perspective (e.g., Lüdtke, Roberts, Trautwein, & Nagy, 2011; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2006; Trautwein, Lüdtke, Marsh & Nagy, 2009). The initial sample comprised 3023 participants who had consented to participate in the longitudinal study at a student performance assessment conducted in 149 schools shortly before the *Abitur*, which is the final examination taken by German students in order to enter post-secondary school. Participants who provided contact information for follow-up waves were assessed again in college; about 80% of the students who were contacted for the longitudinal study provided useable data. Two and four years after high school graduation, in spring 2004 (Time 2, total $n = 1735$) and spring 2006 (Time 3; total $n = 1489$), they were contacted via regular mail and invited to complete a comprehensive questionnaire in exchange for monetary compensation (around \$12 USD). Only participants who continued onto college were included for the current analyses at Times 2 and 3. Their mean age at Time 1 was 19 years ($SD = 0.87$); they had been enrolled at university for an average of 2.64 semesters at Time 2, and 6.44 semesters at Time 3.

Instruments

Life goals. At each of the three time points, participants were presented with a list of 24 life goals and asked to indicate the extent to which each was important to their life on a 4-point Likert-type scale ranging from 1 (*not at all important*) to 4 (*very important*). For the most part, the items were based on a German version of the Aspiration Index (Kasser & Ryan, 1993, 1996; German version by Klusmann, Trautwein, & Lüdtke, 2005), a theoretically and empirically well-established instrument that assesses goals of different quality. The 24 items were grouped into eight broad domains, each assessed by a 3-item scale. The eight domains and their internal consistencies for the three time points were as follows: financial success (e.g., “be financially successful”: α 's = .81, .83, and .82 at Times 1, 2, and 3, respectively), popularity (e.g., “be admired by many people”: α 's = .80, .83, and .81), image (e.g., “have an image that others find appealing”: α 's = .78, .82, and .81), community contribution (e.g., “assist people who need it, asking nothing in return”: α 's = .84, .84, and .85), affiliation (e.g., “have a committed, intimate relationship”: α 's = .76, .84, and .75), personal growth (e.g., “grow and learn new things”: α 's = .63, .71, and .64), health (e.g., “be physically healthy”: α 's = .74, .77, and .73), and hedonism (e.g., “have lots of fun in life”: α 's = .65, .71, and .69).

Perceived goals of fellow students. Participants also rated their perceptions of their fellow students' goals at Time 2. Participants reported their perceptions by rating the same goal items on the same 4-point Likert scale with respect to how important they considered each goal to be for the majority of students in their major. The internal consistencies of these scales were .81 for financial success goals, .79 for popularity goals, .82 for image goals, .85 for community contribution goals, .85 for affiliation goals, .69 for personal growth goals, .76 for health goals, and .66 for hedonism goals.

Coding of fields of study. In order to investigate the role of life goals for self-selection into different majors, participants were asked to indicate their majors, which were then categorized into seven groups, based on a modified version of the official categorization used by the German Federal Statistical Office (2002/2003): natural sciences ($N = 361$ students, 61% female), medical sciences ($N = 98$, 66% female), engineering sciences ($N = 316$, 26% female), social sciences ($N = 153$, 76% female), law ($N = 100$, 64% female), economic sciences ($N = 292$, 64% female), and humanities/fine arts ($N = 415$, 87% female). Though information for all students is not available, of the participants with data across both college time points, only 11.7% of participants were coded as a different major at T3.

Participants were enrolled in universities across Germany. At present, German students are relatively free to choose to study at almost any university. There are restrictions in terms of grade point average (*Abiturnote*) for selected fields, but relative to the American system there is less variation between schools, though German universities are increasingly adopting policies more similar to American schools (e.g., Liefner, Schätzl, & Schröder, 2004). Previous research with German samples suggests that little variance in student characteristics and perceptions of university characteristics was explained between universities, and much more appears to result between fields of study (Jensen, 1987). Hence, we concentrated on the characteristics of majors that can be taken at different universities rather than on specific universities.

Plan of Analysis

We examined goal change by employing latent growth curve models using *Mplus 7* (Muthén & Muthén, 1998-2012). The repeated measures were defined as the scale scores for each life goal. The basic latent growth model includes two latent factors (intercept and slope) that describe the starting value of the first measurement occasion and the rate of change,

respectively. The latent intercept is the result of fixing all loadings of the indicators to 1 whereas the latent slope factor is scaled by fixing the loading of the indicators at T1 to 0, T2 to 1, and T3 to 2. Individuals are allowed to differ in their starting values and rate of changes. Variance components of the intercept and slope reflect individual differences in these parameters.

Intercept and slope parameters are allowed to covary to gauge whether the starting value is associated with subsequent changes. Gender was included as a time invariant covariate by regressing the intercept and slope on gender.

To investigate the influence of college majors had on goal development, weighted effect codes were created so as to test the effect of major compared to the rest of the sample.

Humanities served as a reference group for all remaining majors while social science was used as a reference group for tests concerning the effect of humanities. We used the root mean square error of approximation (RMSEA) as an absolute, and the (CFI) as an incremental measure of goodness of fit (Hu & Bentler, 1999). A model-based approach to missing data was taken, which builds on a full information maximum likelihood (FIML) estimation to utilize all available data (see Allison, 2001, for more details on missing data). Attrition analyses suggest minor differences between individuals who only completed the first measurement wave. Attriters had higher levels of financial success ($d = .06$), hedonism ($d = .07$), popularity ($d = .04$) and image ($d = .01$) goals compared to those that stayed in the study and lower levels of personal growth ($d = -.17$), affiliation ($d = -.13$), community contributions ($d = -.13$), and health ($d = -.08$) goals, though all effect sizes were fairly modest in magnitude. Regarding statistical significance, we have noted all effects in the tables that were below the traditional .05 alpha threshold, due to the exploratory nature of the study, in order to inform future research in the field. However, given

the large number of analyses conducted, we only discuss results that reached a correlation or standardized coefficient of at least .10.

Results

Continuity and Change in Life Goals over Time

Table 1 provides a preliminary description of our goal measures and how they changed over time. Columns 2 to 4 present the means and standard deviations for each measure, while Columns 5 to 8 present the correlations across any two time points for the goal measures. All measures demonstrated high rank-order consistency across measurement occasions. Moreover, all domains except for health had higher mean levels at T1 than at T2 or T3, providing further evidence that emerging adulthood is a period of focused goal selection rather than widespread endorsement (e.g., Roberts et al., 2004; Lüdtke et al., 2009), though these changes often were relatively modest in magnitude.

Another method for addressing this claim is to examine the mean slopes for these goal domains in the univariate latent change models, results of which are presented in Table 2. All goal change models demonstrated moderate to good fit ($CFI > .90$, $RMSEA < .10$), with the exception of hedonism and popularity. Both hedonism and popularity failed to demonstrate reliable individual differences in change, and each of these models had non-significant slope variances. Therefore we excluded these goals from further analyses, because they showed no evidence of reliable changes over time. As shown in Column 4, all goal domains significantly declined over time with the exception of affiliation, which showed no change, and health that also demonstrated a slight increase. Column 5 provides evidence that for all goal domains other than hedonism and popularity, students differed in their goal change trajectories. In other words,

these domains evidenced inter-individual variability in change, thus allowing us to examine influences on goal change for these domains.

Predicting College Major Selection

To test our primary research questions, first, we examined whether initial goal levels predicted which major students selected upon entering college. Specifically, we predicted effect-coded department affiliations from the initial goal levels. For these analyses, and the major congruence effects discussed below, separate models were fit for the each goal domain.

Significant positive effects would indicate that higher initial goal importance after high school graduation predicted a greater tendency to select the given field of study. Results are presented in Table 3 (“L” columns), and demonstrated consistent evidence that goal-setting prior to college predicts college major, though the effects sizes often were quite modest in magnitude. Moreover, in line with expectations, results suggest that individuals tend to hold goals similar to the aims of the given major field. For instance, greater community (est. = .29) and health (.12) goal levels predicted likelihood to select medicine. On the contrary, law majors were more likely to hold goals focused on financial success (.28). Interestingly, it is worth noting that most majors examined (all but economics) demonstrated significant relations with goals focused on personal growth (either positively or negatively), suggesting that this goal pursuit may have more diffuse rather than specific effects on major selection.

Major-Congruence Effects on Goal Change

Given evidence that life goals influence college major selection, we next investigated whether major selection was associated with life goal change using the same set of models that were fit for predicting major selection. We first examined this claim with respect to whether students maintain their importance of those goals presumptively important for the chosen major.

As students would have selected a major prior to the second measurement occasion, we investigated whether department affiliations (again using the effect-coding procedure) predicted mean goal slopes. Results are presented in Table 3 (“S” columns).

Overall, major selection had relatively few significant effects on students’ goal change across the three measurement occasions. Only five out of forty-two effects reached significance, which is slightly above the level expected by chance (12% versus 5%), even at the uncorrected alpha level. In two of the cases, goal change effects ran counter to the direction of the goal level effects. In other words, after choosing a major, students in these cases tended to *decrease* their importance for the goals most predictive of the initial choice. In only three instances (personal growth goals for natural sciences and humanities majors, and community goals for medical majors) were goal level and change effects significant in the same direction. For example, humanities majors were drawn to the major, in part, by their personal growth goals. In addition, being in the major led them to increase in these personal growth goals. Overall, however, little evidence was found for major-congruence effects, except, possibly, for personal growth goals.

Peer Perception Effects

In contrast to the results for major-congruence effects, we found strong associations for goal level and change with respect to the perception that others held similar goals. To test this claim, we correlated students’ level and slope for each goal domain on their perceptions of peer goals at Time 2, fitting separate models for each goal domain (six total models), with results displayed in Columns 2 and 3 of Table 4. Significant positive relations with the level parameter would suggest that students tended to hold goals prior to college similar to those they later perceived for fellow majors. Significant positive relations with the slope parameter would

suggest that students tended to gain on those goals they believed fellow majors deemed important.

With respect to initial levels, results for perceived life goals demonstrated the expected positive effects. In every case, students tended to hold goals following high school graduation that were similar to what they perceived for fellow students within their major (estimates from .28 to .43). With respect to associations with change, the perception that others shared your goals was consistently and strongly related to increases on goal change. For instance, students who perceived that others shared their goals for image increased on image goals ($r = .29$). Similarly, goal consistent changes were also found for the perception of others sharing affiliation ($r = .13$), community ($r = .54$), and personal growth goals ($r = .24$). Perceiving others as sharing financial success and health goals did not predict changes in those respective goal domains.

Normative Peer Congruence Effects

Finally, we examined the role of congruence between students' perceptions of their peers and the aggregate level of peers' actual goals. For these analyses, we subtracted participants' self goals at Time 2 from the average goal levels held by peers in one's major, and then took the absolute value of this score to reflect level of congruence (lower scores equal greater congruence with peers). We then correlated this congruence score with participants' level and slope for the domain of interest; here relationships with level are less important for our theoretical aims but estimated in the models to control for any such effects. Again, six separate models were fit to examine these predictions, one for each domain, results are presented in the far right columns of Table 4. Due to overly high correlations between this congruence score and self-goal levels, the model for affiliation goals lead to a negative correlation matrix, and was impossible to fit. With respect to the other goal domains, we found relatively little evidence that level of congruence

with the normative levels of peer goals has an effect on self-goal change. Specifically, the only effect evidenced was with respect to personal growth goals. Students were more likely to maintain personal growth goals if their personal growth goal level matched that of their peers.

General Discussion

The current study examined a number of important hypotheses regarding how the college experience influences goal change among students. Given the importance of selection and socialization effects for personality trait change (see e.g., Jackson, Thoemmes, Jonkmann, Lüdtke, & Trautwein, 2012; Roberts, Wood, & Caspi, 2008), we focused on this distinction in our organization of the analyses for change in life goals too. In line with this previous research, we focused throughout on testing effects with respect to specific goal domains, rather than on pitting goal domains against one another. First, we tested the extent to which having certain goals led to selection effects in which goals essentially structured the life course in a way that was consistent with those stated goals. In fact, we found evidence that students tended to select into majors that reflected their personal goals. For instance, medical majors tended to have more other-focused goals prior to entering college (e.g., affiliation and community), as well as, unsurprisingly, those focused on maintaining their health. In addition, economics majors focused more on their image and financial success than on their community. Furthermore, students tended to hold goals pre-college that were similar to those they later perceived to be important to students in their selected major. Therefore, selection effects were quite prominent in the current sample.

Surprisingly, we found relatively little evidence for socialization effects associated with choosing a major, which presumably reflects an objective index of the experienced environment. One might predict that students would place greater importance on goals relevant for their major.

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Instead, major selection had very limited associations with goal change after high school. One potential explanation is that some students may have redirected their goal focus following time in their given major, after gaining a better understanding of the goals relevant for that field. If so, these students might have countered any evidence for the expected changes in the positive direction. Alternatively, this finding may reflect the fact that putatively objective indices of environments lack the key ingredient for change, which is the psychological perception of those same environments. Not every English major perceives the experience the same way or likes the experience to the same degree.

To test a more subjective element of the environment, we examined the influence of how students perceived the goals of others in their major. Indeed, stronger evidence was found for subjective peer perception effects, as individuals tended to gain on those goals they perceived as important to fellow majors. In other words, the choice of major itself may prove less a factor in shaping life goals during college than the students one socializes with when striving toward that major. Moreover, our findings suggest that the extent to which students objectively match the goals of their peers plays only a modest role on students' goal change. As such, these findings suggest stronger support that socialization may occur more for perceived than structural benchmarks.

Given the importance of life goals for defining vocational and familial directions, it is worth noting that the current findings are in line with the accruing literature on how investing in social roles influences personality change (Bleidorn, Klimstra, Denissen, Rentfrow, Potter, & Gosling, 2013; Lehnart, Neyer, & Eccles, 2010; Roberts, Wood, & Smith, 2005). For instance, meta-analytic work (Lodi-Smith & Roberts, 2007) suggests that more “psychological” benchmarks of adult roles (e.g., marital satisfaction, perceived quality of volunteerism) may

prove better predictors of change than merely looking at demographic or institutional benchmarks (marital status, number of hours volunteered). Similarly, when considering how the college experience is related to goal change, our findings suggest it proves more valuable to look at the psychological characteristics of a major, such as perceptions of fellow students, than at merely major selection alone. This claim is further supported when looking at the potential selection effects in the current sample, as students' initial goal levels were much more strongly predictive of the perceived goals of fellow majors than of major selection itself.

Implicit in this discussion is an important point regarding the malleability of life goals over time. Like prior research we found that goals to be largely consistent over time. Though goals are not so stable that they rule out the possibility of change. And, like prior research (Lüdtke et al., 2009; Roberts et al., 2004), goals predominantly decreased with time, reflecting the presumed winnowing of options as people matured and decided to move in one direction over another. As such, it appears that life goals are a potential intervention target, particularly given the relationships between goal change and adult well-being (Hill et al., 2011), though it is increasingly clear that these constructs demonstrate consistency and stability even during developmental periods characterized by widespread change.

Several caveats are worth noting though when considering the specific goal domains under investigation. First, health goals often bucked the trends reported above. Students failed to evidence any socialization effects with respect to this domain, which may be perhaps due to the fact that students tended to place greater importance on health during the college years. These findings run counter to the typical declining patterns found for goal changes during emerging adulthood (Lüdtke et al., 2009; Roberts et al., 2004), and are more consistent with research on goals in older individuals (Frazier, Hooker, Johnson, & Kaus, 2000); thus this domain in

particular merits further research in the future. Second, the current sample provided little ability to consider popularity and hedonism goals, given the difficulty with fitting these longitudinal models, due in part to the lack of inter-individual variability in the change patterns. As shown in Table 1, students tended to decline on these goals over time, and there was little evidence that students differed in their tendencies to do so. Therefore, future work should consider additional methods to measure changes in these goals, in order to more firmly test whether there are any individual differences in change over time. For example, more closely-spaced assessments of goals may provide more reliable assessments of change that might reveal important individual differences in popularity and hedonism goals.

Some limitations are worth noting as additional directions for future research. First, these results are necessarily circumscribed by their geographic context. Research thus is needed to examine whether these findings are specific to the German culture. Second, to fully examine the role of socialization, it would be valuable to obtain other individuals' reports of the goals most applicable for a given major as well as measures of peer-self congruence that were not conflated with self-ratings of the goals. For instance, it would be of interest to see whether professors' reports of student goal-setting predict goal change, unique from merely the participants' reports of peers. Moreover, by getting an indicator of self-peer congruence empirically distinguishable from self-reported goals (i.e., not simply self-ratings minus perceptions of peer goals, or actual peer goals), research could gain a better understanding of the role that peers and peer perceptions play on goal-setting. Third, while the goals examined reflect previously identified broad categorizations of goals (Kasser & Ryan, 1993), they are by no means the only types of goals set by college students. Moreover, it would be valuable to assess those goals more specific to each major, which might led to stronger evidence for both selection and socialization processes.

Overall though, the current findings provide strong support that goals matter for picking your major, weaker evidence that majors matter when picking your goals. However, the strongest influence on goal changes throughout college might end up being your perceptions of peers during this experience. As such, future research needs to focus on more fully considering the role of socialization practices on goal-setting in college, as well as whether these effects may be moderated by other individual differences. For instance, individuals with higher GPA's (or other benchmarks of success) may be less susceptible to the influence of their peers, and instead could remain more stable in their goal pursuit. In other words, while the current work presents some evidence regarding what may predict goal changes during college, it remains to be seen whether these influences remain prominent even for those who perceive that they are making progress toward the initial goals of interest.

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References

- Allison, P. D. (2001). *Missing data* (Sage University Papers, Series: Quantitative applications in the social sciences, Series/Number 07-136). Thousand Oaks, CA: Sage.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*, 469-480. doi: 10.1037/0003-066X.55.5.469.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*, 338-375. doi: 10.1037/0033-2909.120.3.338.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, *52*, 366-380. doi: 10.1037/0003-066X.52.4.366.
- Bleidorn, W., Klimstra, T. A., Denissen, J. J., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2013). Personality Maturation Around the World A Cross-Cultural Examination of Social-Investment Theory. *Psychological Science*, *24*(12), 2530-2540. doi: 10.1177/0956797613498396.
- Frazier, L. D., Hooker, K., Johnson, P. M., & Kaus, C. R. (2000). Continuity and change in possible selves in later life: A 5-year longitudinal study. *Basic & Applied Social Psychology*, *22*, 237-243. doi: 10.1207/S15324834BASP2203_10.
- Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization, and compensation: Measurement by self-report and construct validity. *Journal of Personality and Social Psychology*, *82*, 642-662. doi: 10.1037/0022-3514.82.4.642.
- Hill, P. L., Burrow, A. L., Brandenberger, J. W., Lapsley, D. K., & Quaranto, J. C. (2010). Collegiate purpose orientations and well-being in adulthood. *Journal of Applied Developmental Psychology*, *31*, 173-179. doi: 10.1016/j.appdev.2009.12.001.

Hill, P. L., Jackson, J. J., Roberts, B. W., Lapsley, D. K., & Brandenberger, J. W. (2011). Change you can believe in: Changes in goal-setting during emerging and young adulthood predict later adult well-being. *Social Psychological and Personality Science*, 2, 123-131.

doi:10.1177/1948550610384510.

Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55. doi: 10.1080/10705519909540118.

Jackson, J. J., Thoemmes, F., Jonkmann, K., Lüdtkke, O., & Trautwein, U. (2012). Military Training and Personality Trait Development Does the Military Make the Man, or Does the Man Make the Military?. *Psychological Science*, 23(3), 270-277.

Jansen, R. (1987). *Individuelles und kollektives Erleben universitärer Umwelt* [Individual and collective experience of the university environment]. Frankfurt/Main: Peter Lang.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410-422. doi: 10.1037/0022-3514.65.2.410.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 280-287. doi: 10.1177/0146167296223006.

Klusmann, U., Trautwein, U., & Lüdtkke, O. (2005). Intrinsische und extrinsische Lebensziele: Reliabilität und Validität einer deutschen Fassung des Aspirations Index [Intrinsic and extrinsic life goals: Reliability and validity of a German version of the Aspirations Index]. *Diagnostica*, 51, 40-51. doi: 10.1026/0012-1924.51.1.40.

Köller, O., Watermann, R., Trautwein, U., & Lüdtke, O. (Eds.) (2004). *Wege zur Hochschulreife in Baden-Württemberg. TOSCA – Eine Untersuchung an allgemein bildenden und beruflichen Gymnasien* [Paths leading to the school-leaving qualification in Baden-Württemberg. TOSCA – An investigation at traditional and vocational Gymnasium schools]. Opladen: Leske + Budrich.

Lehnart, J., Neyer, F. J., & Eccles, J. (2010). Long-term effects of social investment: The case of partnering in young adulthood. *Journal of Personality, 78*(2), 639-670.
doi: 10.1111/j.1467-6494.2010.00629.x.

Liefner, I., Schätzl, L., & Schröder, T. (2004). Reforms in German higher education: Implementing and adapting Anglo-American organizational and management structures at German universities. *Higher Education Policy, 17*, 23-38. doi: 10.1057/palgrave.hep.8300039.

Lodi-Smith, J. L., & Roberts, B. W. (2007). Social investment and personality: A meta-analytic analysis of the relationship of personality traits to investment in work, family, religion, and volunteerism. *Personality and Social Psychology Review, 11*, 68-86.
doi: 10.1177/1088868306294590.

Lüdtke, O., Roberts, B. W., Trautwein, U., & Nagy, G. (2011). A random walk down university avenue: life paths, life events, and personality trait change at the transition to university life. *Journal of Personality and Social Psychology, 101*(3), 620. doi: 10.1037/a0023743.

Lüdtke, O., Trautwein, U., & Husemann, N. (2009). Goal and personality trait development in a transitional period: Assessing change and stability in personality development. *Personality and Social Psychology Bulletin, 35*(4), 428-441. doi: 10.1177/0146167208329215.

Marsh, H. W., Trautwein, U., Lüdtke, O., Köller, O., & Baumert, J. (2006). Integration of multidimensional self-concept and core personality constructs: Construct validation and relations to well-being and achievement. *Journal of Personality, 74*, 403-456.

doi: 10.1111/j.1467-6494.2005.00380.x.

McKnight, P. E., & Kashdan, T. B. (2009). Purpose in life as a system that creates and sustains health and well-being: An integrative, testable theory. *Review of General Psychology, 13*, 242-251. doi: 10.1037/a0017152.

Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Nurmi, J.-E., & Salmela-Aro, K. (2002). Goal construction, reconstruction and depressive symptoms in a life-span context: The transition from school to work. *Journal of Personality, 70*, 385-419. doi: 10.1111/1467-6494.05009.

Reitz, A. K., Zimmerman, J., Hutteman, R., Specht, J., & Neyer, F. J. (2014). How peers make a difference: The role of peer groups and peer relationships in personality development. *European Journal of Personality, 28*, 279-288. doi: 10.1002/per.1965

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality trait development in emerging adulthood. *Journal of Personality and Social Psychology, 87*, 541-550. doi:10.1037/0022-3514.87.4.541.

Roberts, B.W., & Robins, R. W. (2004). A longitudinal study of person-environment fit and personality development. *Journal of Personality, 72*, 89-110.

Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., p. 375-398). Guilford: New York.

Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating Five Factor Theory and social investment perspectives on personality trait development. *Journal of Research in Personality, 39*, 166-184. doi: 10.1016/j.jrp.2004.08.002.

Salmela-Aro, K., & Nurmi, J. E. (1997). Goal contents, well-being, and life context during transition to university: A longitudinal study. *International Journal of Behavioral Development, 20*(3), 471-491. doi: 10.1080/016502597385234.

Trautwein, U., Lüdtke, O., Marsh, H. W., & Nagy, G. (2009). Within-school social comparison: How students' perceived standing of their class predicts academic self-concept. *Journal of Educational Psychology, 101*, 853-866. doi: 10.1037/a0016306.

Trautwein, U., Neumann, M., Nagy, G., Lüdtke, O., & Maaz, K. (Eds.). (2010). *Schulleistungen von Abiturienten: Die neu geordnete gymnasiale Oberstufe auf dem Prüfstand* [School achievement of high school graduates]. Wiesbaden, Germany: VS Verlag für Sozialwissenschaften. doi:10.1007/978-3-531-92037-5.

Table 1: Descriptive statistics for goal measures, along with rank-order consistency, and tests of mean differences between the three assessment occasions,.

Goal Domain	T1 M (sd)	T2 M (sd)	T3 M (sd)	r_{1-2}	r_{2-3}	r_{1-3}
Image	2.58 (.64) ^{ab}	2.35 (.64)	2.36 (.68)	.54	.64	.44
Popularity	2.11 (.62) ^{ab}	2.05 (.58)	2.03 (.62)	.53	.60	.50
Financial Success	2.53 (.67) ^{ab}	2.45 (.67) ^c	2.41 (.64)	.67	.68	.58
Hedonism	3.40 (.46) ^{ab}	3.32 (.49) ^c	3.27 (.48)	.50	.57	.47
Affiliation	3.83 (.34) ^{ab}	3.77 (.37) ^c	3.80 (.36)	.40	.45	.34
Community Contribution	3.05 (.57) ^{ab}	2.91 (.63) ^c	3.49 (.44)	.53	.64	.55
Personal Growth	3.53 (.42) ^{ab}	3.46 (.45)	3.49 (.44)	.46	.52	.36
Health	3.41 (.50) ^{ab}	3.45 (.47) ^c	3.48 (.40)	.49	.53	.43

Note: All correlations were significant at the $p < .05$ level. For tests of mean differences, superscript ^a indicates a significant difference between T1 and T2, ^b between T1 and T3, and ^c between T2 and T3.

Table 2: Results of initial latent growth models for the different goal categories, presenting the latent means and variances for the level and slope parameters, along with the correlations between intercepts and slopes.

Goal Domain	Level M (s.e.)	Level Var. (s.e.)	Slope M (s.e.)	Slope Var. (s.e.)	r_{IS}
Image	2.46 (.009)*	0.24 (.013)*	-0.05 (.007)*	0.03 (.007)*	-.12
Financial Success	2.63 (.010)*	0.29 (.014)*	-0.09 (.006)*	0.02 (.007)*	-.27
Affiliation	3.76 (.006)*	0.08 (.007)*	0.01 (.005)	0.02 (.004)*	-.41*
Community Contribution	2.98 (.008)*	0.20 (.012)*	-0.08 (.006)*	0.03 (.006)*	-.06
Personal Growth	3.54 (.006)*	0.77 (.006)*	-0.03 (.005)*	0.02 (.004)*	-.15
Health	3.44 (.007)*	0.12 (.007)*	0.02 (.005)*	0.02 (.004)*	-.37*

Note: * indicates $p < .05$. Hedonism and popularity evidenced non-significant slope variance, as well as difficulties with model identification, and thus were eliminated from the remaining analyses.

Table 3: Standardized estimates for the latent levels and slopes predicting chosen college field of study, with level reflecting high school goal levels and slopes reflecting change from high school through college; 95% confidence intervals are presented in brackets.

Goal Domain		Image	Financial Success	Affiliation	Community	Personal Growth	Health
Natural Sciences	Level	-.16 [-.23, -.09]	-.05[-.12, .02]	-.12* [-.20, -.05]	-.04 [-.12, .02]	-.10* [-.17, -.03]	-.03 [-.10, .05]
	Slope	.02 [-.10, .12]	.02 [-.12, .14]	.05 [-.05, .15]	.01 [-.10, .12]	-.10* [-.20, -.01]	.00 [-.09, .08]
Medicine	Level	.05 [-.02, .11]	-.04 [-.09, .02]	.06 [-.01, .12]	.17* [.11, .23]	.07* [.01, .14]	.09* [.03, .15]
	Slope	.02 [-.08, .12]	.05 [-.06, .16]	-.04 [-.13, .04]	.12* [.02, .22]	-.02 [-.10, .07]	.01 [-.07, .08]
Engineering	Level	-.11*[-.18, -.04]	.12* [.06, .19]	-.13* [-.21, -.06]	-.19* [-.26, -.13]	-.24* [-.31, -.14]	-.04 [-.11, .03]
	Slope	-.00 [-.12, .11]	-.02 [-.15, .10]	.07 [-.03, .17]	.02 [-.08, .13]	.02 [-.08, .10]	-.04 [-.13, .05]
Social Sciences	Level	-.02[-.09, .04]	-.12*[-.18, -.06]	.10* [.03, .16]	.13* [.07, .19]	.10* [.03, .16]	.04 [-.03, .10]
	Slope	-.04 [-.15, .06]	-.01 [-.13, .10]	-.02 [-.11, .07]	-.03 [-.13, .07]	.03 [-.05, .12]	-.03 [-.11, .05]
Law	Level	.04 [-.02, .11]	.14* [.08, .20]	.02 [-.05, .08]	-.03 [-.09, .04]	.07* [.01, .13]	.00 [-.06, .06]
	Slope	.06 [-.04, .17]	-.05 [-.16, .07]	-.03 [-.12, .05]	-.06 [-.16, .04]	-.11* [-.20, -.02]	.03 [-.05, .11]
Economics	Level	.20* [.13, .25]	.28* [.22, .35]	.01 [-.06, .08]	-.16* [-.23, -.10]	-.02 [-.10, .05]	.09* [.02, .16]
	Slope	-.12* [-.23, -.00]	-.06 [-.19, .06]	-.07 [-.17, .03]	-.05 [-.16, .06]	.00 [-.09, .10]	-.08 [-.15, .03]
Humanities	Level	.22* [.12, .23]	-.16* [-.25, -.06]	.01 [-.06, .08]	.11* [.01, .21]	.23* [.12, .33]	-.06 [-.16, .04]
	Slope	-.01 [-.17, .15]	.05 [-.13, .23]	-.07 [-.17, .03]	-.04 [-.19, -.12]	.19* [.05, .33]	.06 [-.06, .17]

Note: * indicates $p < .05$. L = Level, S = Slope.

Table 4: Standardized estimates between level and slope in goal categories with the perceived goal importance of fellow students; 95% confidence intervals are presented in brackets.

Goal Domain	Peer Perception		Peer Congruence	
	Level	Slope	Level	Slope
Image	.33*	.29*	.07*	-.01
	[.27, .38]	[.07, .51]	[.01, .13]	[-.10, .09]
Financial Success	.43*	.11	.06*	.01
	[.38, .48]	[-.08, .29]	[.01, .12]	[-.09, .10]
Affiliation	.28*	.11*	--	--
	[.21, .33]	[.02, .20]		
Community	.43*	.54*	-.08*	-.06
	[.38, .49]	[.30, .79]	[-.14, -.03]	[-.15, .03]
Personal Growth	.28*	.24*	-.25*	-.12*
	[.22, .34]	[.15, .34]	[-.32, -.18]	[-.21, -.02]
Health	.36*	-.04	-.08*	.03
	[.30, .42]	[-.12, .05]	[-.14, -.03]	[-.15, .04]

Note: * indicates $p < .05$. The peer incongruence model for affiliation evidenced a negative error variance and is not included in the results.