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Developmental Stability of Scholastic, Social, Athletic, and Physical Appearance Self-Concepts from Preschool to Early Adulthood

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Abstract

Background.—Self-concept has meaningful relations with psychological functioning and well-being across the lifespan. Hence it is important to understand how and when individual differences in multiple domains of self-concept begin to stabilize and whether individual differences remain stable throughout childhood and adolescence and into early adulthood.

Methods.—We assessed individuals' ($N=372$) scholastic, social, athletic, and physical appearance self-concepts at five waves over 20 years from age 4 to age 24.

Results.—In general, stability was large, but medium-sized estimates were obtained for some domains over longer (e.g., 6-year) intervals. Indirect effects from preschool to early adulthood were small, but from age 14 to 24 were medium to large. Stabilities maintained significance independent of family socioeconomic status and global self-worth. Stability estimates were similar for boys and girls except over adolescence for scholastic self-concept, which was more stable for girls than boys.

Conclusions.—Multiple domains of self-concept constitute stable individual-difference characteristics, independent of global feelings of self-worth. Individuals who have high or low self-concepts early in development tend to maintain their relative standing into early adulthood suggesting points of intervention.

Keywords

Self-concept; stability; development

Introduction

Self-concept is a major component of well-being that has been linked to overall life satisfaction (Marcionetti & Rossier, 2016; Myers & Diener, 1995), positive emotions (Mahon & Yarcheski, 2002), and protection against anxiety and depression (Lee, Dickson, Conley, & Holmbeck, 2014; Ohannessian, Lerner, Lerner, & von Eye, 1994). Self-concept is

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a multidimensional construct encompassing global self-perceptions as well as specific self-perceptions in diverse domains, such as academics, social interactions, athletics, and physical appearance. Children differ in their levels of self-concepts, and those levels relate to their personality characteristics (Watson, Suls, & Haig, 2002) as well as their psychological functioning (Cheng & Furnham, 2003). Some evidence suggests that individual differences in self-concepts are stable over later childhood and adolescence (Chung, Hutteman, van Aken, & Denissen, 2017; Cole et al., 2001; Trzesniewski, Donnellan, & Robins, 2003), but no studies to our knowledge have documented the developmental stability of multiple domains of self-concept from early childhood to early adulthood, as we do here.

Developmental Course of Self-Concepts

Self-perceptions appear to begin as very general conceptions but eventually become specific and compartmentalized. Young children generally hold positive unified perceptions of their competence (LeGear et al., 2012), but self-concepts subsequently diverge from a more global unidimensional model of the self and may follow different courses of development. Gains in cognition from early childhood through adolescence allow for the development of more detailed and realistic self-concepts as children age. Thus, older children and adolescents can hold differentiated views of the self as “good” in one domain, but “not so good” in another, or as fluctuating with time or situation (Harter, 2012). Reflecting these developmental trends, several researchers have found increasing differentiation in self-concept as children enter middle-childhood (Damon & Hart, 1988; Harter, 1996; Marsh, 1989) with self-concepts in different domains showing conceptual and statistical independence (Harter, 1988; Rentzsch, Wenzler, & Schütz, 2016). Measuring only global self-concept therefore ignores important variations in academic, social, athletic, and appearance domains of self-concept (see DuBois & Tevendale, 1999).

Why Study Stability of Self-Concepts?

This study is centrally concerned with the individual-order stability of self-concepts over development (Bornstein, Putnick, & Esposito, 2017). Most studies of the development of self-concepts focus on group mean-level changes across time – whether self-concepts normatively dip or surge at certain ages (Esnaola, Sesé, Antonio-Agirre, & Azpiaz, in press; Harter & Whitesell, 2003; Orth, Erol, & Luciano, 2018; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). Some studies also explore variation around average levels, and differences in trajectories or slopes, as in growth curve models (Baldwin & Hoffmann, 2002; Rhodes, Roffman, Reddy, & Fredriksen, 2004). Individual stability represents a distinct measure of the consistency of self-concepts across development. If children tend to maintain their relative ordering in the group over time (regardless of group mean-level shifts), stability is high. If children change their relative ordering over time (as in shuffling a deck of cards), stability is low. A construct that has high stability over development can be used to predict later functioning and suggests that self-concepts are meaningful individual-differences characteristics that may resist change. A construct that has low stability is less predictive of later functioning and suggests that maturational and/or environmental factors interrupt stability, or that measurement of the construct is problematic (e.g., low reliability). In

discussing stability coefficients, we use Cohen and Cohen's (1983, p. 61) established criteria for small ($r \approx .10$), medium ($r \approx .30$), and large ($r \approx .50$) effect sizes.

One advantage of assessing developmental stability (as opposed to mean-levels or growth curves) is that measurements of the construct may change over development. Although this study used Harter's (1985, 1986, 1988; Harter & Pike, 1984) suite of assessments at each age, the item content, domains, and methods of assessment of self-concept necessarily change somewhat as children age. For example, indicators of athletic competence should be different for preschoolers (climbing and jumping) and adolescents (organized sports and athletics). Assessing stability in the way we do allows for the indicators in each domain to change with the age of the child.

Previous Studies of Self-Concept Stability

Previous studies have assessed stability of one or more self-concepts over development. Chung, Hutteman, van Aken, and Denissen (2017) and Trzesniewski, Donnellan, and Robins (2003) explored the stability of global self-worth from age 9 to 29 and 6 to 83, respectively, finding large stability. Harris, Wetzel, Robins, Donnellan, and Trzesniewski (2018) found medium to large stability in global, academic, physical, and peer relation self-concepts in Mexican American children over 2-year periods from age 10 to 16. Cole and colleagues (2001) used the Harter self-concept scales with two overlapping cohorts to explore the stability of academic competence, physical appearance, behavioral conduct, social acceptance, and sports competence from 3rd to 11th grades. Strong stability over 6-month intervals was noted, but stability was slightly reduced across the transition to middle school in four of the five domains studied (only sports competence was unaffected). Here, we investigate stability over longer time-spans and across differentiated domains of self-concepts, controlling for family SES and the child's evaluation of global self-worth.

Gender

Few studies have examined child gender as a moderator of stability in self-concepts. There are well-documented differences in average levels of self-concepts in European and European American samples that tend to favor boys (Pinto, Gatinho, Fernandes, & Verissimo, 2015; Rentzsch et al., 2016; Zuckerman, Li, & Hall, 2016). For example, preschool-aged boys report higher perceived physical competence and more proficient motor skills compared with girls (Robinson, 2011). However, these mean-level differences do not necessarily inform stability. Trzesniewski and colleagues (2003) reported no differences in stability of global self-esteem from early adolescence through adulthood, but gender differences in the stability of individual domains of self-concept have yet to be examined. We do so here.

This Study

This study was designed to follow the same individuals from preschool through early adulthood, assessing multiple age-appropriate domains of self-concept. As reviewed, previous longitudinal studies of self-concept development have generally studied only global

self-esteem or studied multiple domains over short time-periods. Here, we studied the developmental stability of scholastic, social, athletic, and physical appearance domains of self-concept. We also explored stability of each domain controlling for an independent global self-worth scale. Because children's self-concepts are presumed to become more differentiated over time, it is important to assess whether stability is simply a function of global self-worth (e.g., all domains of self-concept are stable because global self-worth is stable) or if each domain is independently stable. Based on the small literature regarding the stability of self-worth, we expected medium to large stabilities in self-concepts from middle childhood to early adulthood. Preschoolers have been shown to have somewhat unrealistic self-concepts (Madigan, Winsler, Maradiaga, & Grubba, 2002), and with no previous studies to draw on we anticipated somewhat smaller stability from preschool to middle childhood.

Method

Participants

Altogether, 372 European American children participated in this 20-year, 5-wave prospective longitudinal study. Most children ($n=312$) were firstborn in their families, but a subsample of 60 second children born to the initial set of families was also recruited to the overall sample. On average, children were 4.05 ($SD=0.09$, $range=3.84-4.62$; $N=304$), 10.27 ($SD=0.18$, $range=9.76-10.90$; $N=263$), 13.85 ($SD=0.28$, $range=13.00-14.92$; $N=199$), 18.22 ($SD=0.37$, $range=17.38-19.60$; $N=191$), and 23.55 ($SD=0.60$, $range=21.74-25.58$; $N=278$) years of age at the five assessment waves (hereinafter referred to as 4, 10, 14, 18, and 24 years old, respectively). Approximately half of children (177; 47.6%) were female. Family SES (indexed by Hollingshead, 1975) ranged from 14 to 66 ($M=51.77$, $SD=12.22$). At age 24, fewer than 1% of the participants had not completed high school, 27.0% completed high school, 7.8% obtained an Associate degree, 58.4% completed a standard 4-year college degree, and 6.4% completed a graduate or professional degree.

The sample in this study was limited to European American children because self-concepts have been shown to differ in children from different ethnic groups. In a meta-analysis, Twenge and Crocker (2002) found that European American children and adults have lower global self-esteem than African American children and adults (see also Gray-Little & Hafdahl, 2000), but higher self-esteem than other minority groups. Other studies have noted slightly different trajectories of self-concepts over development by ethnicity (Rhodes et al., 2004; Robins et al., 2002) and higher stability of global self-esteem for European Americans than Latin, African, and Native Americans (Trzesniewski et al., 2003). Rather than combine ethnic groups and cloud the findings relative to any one group, we studied a single ethnic group and have clearer (but more limited) generalizability (Bornstein, Jager, & Putnick, 2013; Jager, Putnick, & Bornstein, 2017). Still, we recruited a socioeconomically diverse group of European American families and controlled for variation in socioeconomic status (SES).

Procedures

Families were recruited through mass mailings and newspaper advertisements in the greater Washington, DC metropolitan area including suburbs of Maryland, Virginia, and West

Virginia. Data were collected during laboratory visits at 4 and 14 years, during a home visit at 10 years, and through a secure website at 18 and 24 years. All questionnaires from age 10 onward were self-administered. Informed consent/assent was obtained from mothers and adolescents/young adults, participants were compensated for their time, and the study was approved by the Internal Review Board of the NICHD, Protocol: 88-CH-0032.

Measures

Following Harter (1986, 2012), we matched scales to four domains of self-concept across four age-appropriate versions of the Harter self-competence scales. Some domains of self-concept were not available at each time point because they were not developmentally appropriate (e.g., physical appearance in preschool), and sometimes we included a conceptually related scale with slightly different content in the domain because it was more age-appropriate (e.g., intellectual ability rather than scholastic competence for age 24 because most participants were no longer in school).

At age 4, the Pictorial Scale of Perceived Competence and Social Acceptance (Harter & Pike, 1984) was used to assess cognitive competence, physical competence, and peer acceptance. Six items composed each domain. For each item, children were shown two pictures of children with thought bubbles over their heads and asked to point to the picture of the child who was more like them. Children were then prompted with a follow-up question about whether they were really like that child or just a little bit like that child. Children then pointed to a large or small circle underneath the picture of the child they indicated was more like them, resulting in scores ranging from 1 (*least competent*) to 4 (*most competent*).

The Self-Perception Profile for Children (SPPC; Harter, 1985) was completed at age 10, the Self-Perception Profile for Adolescents (SPPA; Harter, 1988) was completed at ages 14 and 18, and the Self-Perception Profile for College Students (SPPCS; Harter, 1986) was completed at age 24. Scholastic competence (e.g., mastering coursework, intellectually competent at studies) was assessed at ages 10, 14, and 18, and intellectual ability (e.g., smart, intelligence) was assessed at age 24, as the majority of participants had completed their education. Social competence (e.g., acceptance by peers, popularity, likeability), physical appearance (e.g., satisfaction with looks, body image), and global self-worth (e.g., likes oneself as a person, happy with the way one is leading one's life) were assessed at ages 10, 14, 18, and 24. Athletic competence (e.g., ability to do well at sports, demonstrates athletic prowess) was assessed at ages 14, 18, and 24. At 10 years, each domain was composed of 6 items; at 14 and 18 years, each domain was composed of 5 items; and at 24 years, each domain was composed of 4 items. In all questionnaires, two opposing statements were presented and the participant chose the statement that was more like him or her and then chose *sort of true for me* or *very true for me*. For each domain, half of the items were worded with the negative statement first to ensure balance. Responses were scored from 1–4, with a high score indicating high competence.

Results

Preliminary Analysis and Analytic Plan

Before evaluating stability, latent variable measurement models were fit on all self-concept constructs at each age with 4–6 observed items as indicators, depending on the domain and age. Stability of self-concept was then estimated by standardized regression coefficients from structural equation models (SEM) via *Mplus* version 8 (Muthén & Muthén, 2017), with a robust maximum likelihood estimator (MLR; Little & Rubin, 2002). To account for the nested structure of the data from families where two children participated (i.e., first- and secondborns), we clustered based on family and used the Huber-White adjustment of the standard errors to account for non-independence. Missing data were handled with full-information maximum likelihood (FIML) in *Mplus*.

Separate stability models for each self-concept were tested on the full sample. To obtain stability estimates across ages, SEMs in which each self-concept latent variable was a function of the immediately preceding one was hypothesized. To account for any variation in child age at each wave, we explored concurrent correlations of child age with self-concept to determine if age adjustment was warranted. Age variation at 18 years correlated significantly with scholastic competence ($\beta = -.15, p = .045$); age at the 18-year assessment was added to the scholastic competence stability models as a covariate when we assessed stability estimates.

After fitting stability models on the full sample, we performed multiple-group analysis on girls and boys to test for gender differences in stabilities. Metric invariance tests (no gender difference on factor loadings) for self-concepts at each age were first evaluated to determine if they were similar constructs across gender at each age. To compare stability estimates across gender, Satorra-Bentler scaled χ^2 difference tests (S-B χ^2 ; Satorra & Bentler 2010) of two nested models, one with invariance constraints on factor loadings and all stability coefficients and the other with constraints only on factor loadings, were computed. If S-B χ^2 s were not significant, it suggested that the stability estimates being compared were not different across gender. If S-B χ^2 s were significant, we examined model modification indices and iteratively released the constraint(s) with the highest indices. This procedure identifies stability estimate(s) that differed between girls and boys.

Finally, we evaluated the stability estimates controlling for family SES and the child's evaluation of global self-worth. Family SES was used as a fixed covariate, and the child's evaluation of global self-worth obtained at ages 10, 14, 18, and 24 years was used as a time-varying covariate. Given that global self-worth was not measured at age 4, the age 4 self-concept variables were omitted from these analyses. Figure 1 shows how we assessed stability of self-concepts controlling for family SES and self-worth. In this covariate analysis, stability in self-concept was tested on the residuals after accounting for each factor's shared variance with family SES and concurrent evaluations of self-worth. We consider all statistically significant stabilities (even small ones) to be potentially meaningful because even small stabilities over relatively long periods of time are potentially important (Bornstein, 2014).

Stability of Self-Concepts

Scholastic competence.—Before evaluating stability, measurement models were fit for each age, the 18-, and 24-year measurement models required two and one error covariances, respectively, to account for closely-related item content. Good measurement models were achieved for all ages, with item indicators loading significantly on their factors at each age (β s ranged from .29 to .87, all p s < .001), p s for χ^2 test of model fit ranged from .26 to .60, all CFIs = 1, SRMR ranged from .01 to .03, and RMSEA ranged from .00 to .04. Metric invariance was obtained across gender at all ages, p s for S-B χ^2 ranged from .07 to .77.

To obtain stability estimates across ages, an *a priori* model in which all indicator variables loaded on their respective factors (along with 3 source/test covariances we added to the measurement models), each latent variable was a function of the immediately preceding latent variable, and the 18-year scholastic competence latent factor controlled for age variations within wave was hypothesized and tested. The *a priori* model fit the data: $\chi^2(317, N = 372) = 388.13, p = .004$, Robust CFI = .96, SRMR = .07, RMSEA = .03, 90% CI = [.02, .03]. Table 1 shows stability estimates across ages on the full sample. Except for stability estimated between the two earliest ages, stabilities were large across all data collection waves, and stabilities remained large after controlling for family SES and global self-worth. The indirect effects of age 4-, 10-, and 14-year scholastic competence on 24-year scholastic competence were all significant.

Girls and boys did not differ in their stability estimates across ages with only one exception, S-B $\chi^2(4, N = 372) = 10.00, p = .04$: From ages 14 to 18 years, stability was greater for girls ($\beta = .89, p < .001$) than for boys, ($\beta = .75, p < .001$). With this equality constraint released in the model, the S-B χ^2 between this revised model and a model in which only factor loadings were constrained to be equal was no longer significant, S-B $\chi^2(3, N = 372) = 2.99, p = .39$.

Social competence.—The 4-, 10-, 18-, and 24-year measurement models required one or two error covariances to account for closely-related item content. Good measurement models were achieved for all ages, with item indicators loading significantly on their factors at each age (β s ranged from .16, $p = .029$, to .90, $p < .001$), p s for χ^2 test of model fit ranged from .11 to .62, CFI ranged from .98 to 1, SRMR ranged from .00 to .03, and RMSEA ranged from .00 to .05. Metric invariance was obtained across gender at all ages, p s for S-B χ^2 ranged from .46 to .98.

To obtain stability estimates across ages, an *a priori* model in which all indicator variables loaded on their respective factors (along with 6 error covariances we added to the measurement models), and each latent variable was a function of the immediately preceding latent variable was hypothesized and tested. The *a priori* model fit the data: $\chi^2(289, N = 371) = 403.89, p < .001$, Robust CFI = .94, SRMR = .07, RMSEA = .03, 90% CI = [.03, .04]. Except for stability estimated between the two earliest ages, stabilities were large across all data collection waves, and stabilities remained large after controlling for family SES and global self-worth (see Table 1). Age 4 social competence did not indirectly predict age 24 social competence. The indirect effects of age 10- and 14-year social competence on 24-year social competence were both significant.

Girls and boys did not differ in their stability estimates across ages, $S-B\chi^2(4, N = 371) = 0.67, p = .95$.

Athletic competence.—The 4- and 24-year measurement models each required one error covariance to account for closely-related item content. Good measurement models were achieved for all ages, with item indicators loading significantly on their factors at each age (β s ranged from .34 to .92, all $p < .001$), p s for χ^2 test of model fit ranged from .08 to .38, CFI ranged from .94 to 1, SRMR ranged from .00 to .04, and RMSEA ranged from .00 to .05. Metric invariance was obtained across gender at all ages, p s for $S-B\chi^2$ ranged from .11 to .31.

To obtain stability estimates across ages, an *a priori* model in which all indicator variables loaded on their respective factors (along with 2 error covariances we added to the measurement models), and each latent variable was a function of the immediately preceding latent variable was hypothesized and tested. The *a priori* model fit the data: $\chi^2(165, N = 369) = 199.86, p = .03$, Robust CFI = .99, SRMR = .05, RMSEA = .02, 90% CI = [.01, .04]. Except for stability estimated between the two earliest ages, stabilities were large across all data collection waves, and stabilities remained large after controlling for family SES and global self-worth (see Table 1). Both the indirect effects of age 4- and 14-year athletic competence on 24-year athletic competence were significant (athletic competence was not assessed at 10-years).

Girls and boys did not differ in their stability estimates across ages, $S-B\chi^2(3, N = 369) = 0.62, p = .89$.

Physical appearance.—All measurement models required error covariances to account for closely-related item content. Good measurement models were achieved for all ages, with item indicators loading significantly on their factors at each age (β s ranged from .48 to .85, all $p < .001$), p s for χ^2 test of model fit ranged from .03 to .47, CFI ranged from .98 to 1, SRMR ranged from .01 to .03, and RMSEA ranged from .00 to .06. Metric invariance was obtained across gender at all ages, p s for $S-B\chi^2$ ranged from .07 to .30.

To obtain stability estimates across ages, an *a priori* model in which all indicator variables loaded on their respective factors (along with 6 error covariances we added to the measurement models), and each latent variable was a function of the immediately preceding latent variable was hypothesized and tested. The *a priori* model fit the data: $\chi^2(160, N = 335) = 201.45, p = .01$, Robust CFI = .98, SRMR = .06, RMSEA = .03, 90% CI = [.01, .04]. Except for stability estimated between the two earliest ages, stabilities were large across all data collection waves, and stabilities remained large after controlling for family SES and global self-worth (see Table 1). Both the indirect effects of age 10- and 14-year physical appearance competence on 24-year physical appearance competence were significant.

Girls and boys did not differ in their stability estimates across ages, $S-B\chi^2(3, N = 335) = 0.30, p = .95$.

Discussion

Overall, we found significant medium-to-large stabilities of four domains of self-concept across 4- to 6-year waves from preschool to early adulthood in European American children. These stabilities largely remained significant even controlling for global self-worth and family SES. Long-term stability measured by indirect effects from age 4 and 10 to age 24 were generally small but significant. Only the indirect effect of social competence from age 4 to 24 was nonsignificant. Ten-year stability from age 14 to 24 was medium to large. This is the first study to show stability of self-concept from preschool through adulthood, but stabilities were weakest from age 4 to age 10. The young age of children at the first time point, the different response mode of the preschool scale (oral vs. written responses), and/or comparatively longer time span may have attenuated stabilities over this developmental period.

To regularize stability estimates to a common metric of 1 year, and to allow comparisons with other studies that measure stability over shorter time spans, we followed Chung and colleagues (2017) and estimated annual stability by taking the n th root of the stability estimate, where n is the number of years between assessments. Assuming constant stability over the unmeasured periods, annual stabilities ranged from .84 to .95 for scholastic competence, .78 to .92 for social competence, .91 to .98 for athletic competence, and .76 to .93 for physical appearance. Hence, even from age 4 to age 10, annual stability could be considered large. Of course, it is not certain that stability is constant from year to year over the unmeasured periods, however previous studies that measured self-concept stability over shorter time periods suggest that overall it is (with the possible exception of the transition to middle school; Cole et al., 2001).

Stabilities this large suggest that various domains of self-concept are resistant to change. Even before formal schooling begins, children who perceive themselves to be physically or cognitively competent relative to their peers tend to maintain that perception from year to year stretching into young adulthood. Still, even large stability estimates leave room for change. The strongest stability coefficient, .88 for athletic competence from age 18 to 24, still leaves 23% of the variance in age-24 athletic competence explained by factors other than 18-year athletic competence. Hence, there are still individual order changes in self-concept over development.

The strong stability of self-concepts is likely a result of both genetic and environmental factors. Global self-concept is thought to be strongly determined by genetics (Jonassaint, 2010; Shikishima et al., 2018), but environmental factors also contribute to self-concepts (Hur, McGue, & Iacono, 1998; Neiss, Sedikides, & Stevenson, 2002). Children who feel competent may lead others to believe in their competence. Parents and teachers who believe in the child's competence may provide experiences that encourage or reinforce those self-concepts. For example, children who feel strongly physically competent may ask their parents to sign them up for a sports team, or parents who see physical competence in their children may encourage their children to pursue certain sports. Children with better self-concepts may also work harder, developing greater skill, thus reinforcing their own self-concepts.

We found that stability in four domains of self-concept held largely independent of global self-worth and variation in family SES. Supporting this finding, Hur, McGue, and Iacono (1998) explored the genetic and environmental components of self-concept in adolescent girls. Genetic and environmental factors influenced different domains of self-concept independent of global self-concept. Unfortunately, Harter and Pike (1984) did not include an independent measure of global self-concept in the pictorial scales at age 4, so we were unable to control for stability from 4 to 10 years, when individual domains of self-concept may be less differentiated.

Stability was similar in boys and girls with one exception – girls had stronger stability in scholastic self-concept from age 14 to 18 than boys, although boys' stability was still large and significant. Cole and colleagues (2001) did not find any gender differences in 6-month stabilities of academic, social, athletic, physical appearance, or behavioral conduct self-concepts from grades 3 through 11. It is possible that assessing stability across 6-month intervals masks a gender difference in the stability of scholastic self-concept from the end of middle school to the end of high school. With no other studies of stability to reference, we also considered mean-level changes in girls' and boys' scholastic self-concepts to explain this differential stability finding. In a meta-analysis of gender differences in self-concept over development, Wilgenbusch and Merrell (1999) noted that boys had higher scholastic self-concepts than girls in elementary but not high school. Jacobs, Lanza, Osgood, Eccles, and Wigfield (2002) tracked children's math and English self-concepts from first to twelfth grades. Mean-level math self-concepts declined similarly for boys and girls across high school, and English self-concepts remained constant, with boys scoring lower than girls in this period. Perhaps the academic demands of high school make boys feel less competent and destabilize boys' scholastic self-concepts more than girls'. More research is needed to corroborate this finding.

Strengths and Limitations

This study had several strengths, including the relatively large sample, the 20-year longitudinal design, assessment of multiple domains of self-concept, and strong psychometric properties of the instruments. However, these strengths are balanced by some limitations. First, despite the length of the study, assessments were separated by 4 to 6 years. Longer times between assessments may attenuate stability, and the uneven intervals make it more difficult to compare stability across waves. To address this limitation, we computed post-hoc yearly stability. Second, although we used Harter's self-concept scales at each wave, the content of those scales changed over development. This is both a strength and a weakness because assessment should change as the construct develops, but changing constructs may also limit stability. Third, stabilities may be artificially inflated by shared source/rater variance because all assessments of self-concept were completed by the child. Still, the child is the best source for an intrapsychic construct like self-concept. Fourth, we studied only European American children. Hence, we can only reasonably generalize the findings to European Americans, and additional research is needed to determine whether our findings would be similar in other ethnic groups.

Implications and Conclusions

The relatively strong stability of individual differences found in this study has several implications. First, despite the somewhat overinflated self-concepts of preschoolers (Madigan et al., 2002), individual differences in preschool scholastic, social, and athletic self-concepts significantly predict individual differences in age-10 or –14 self-concepts. Few studies have explored the stability of global self-concept from preschool, and none has assessed multiple domains of self-concept. If children have poor self-concepts in preschool, early interventions could be used to boost lagging skills and/or feelings of self-worth. O'Mara, Marsh, Craven, and Debus (2006) meta-analyzed 200 interventions to improve self-concepts, finding that interventions were generally effective, but were more effective if they targeted and assessed a particular domain of self-concept. Only 4% of interventions targeted preschool children.

A second implication of this study is that stability of individual differences is strong even if mean levels change over time, as has been shown in many studies (Esnaola, et al., in press; Harter & Whitesell, 2003; Jacobs et al., 2002; Orth et al., 2018). Hence, even if children's self-concepts decline in mean level as they age (e.g., Robins et al., 2002), the ordering of individuals in the group stays relatively consistent. Young children who have strong self-concepts relative to their peers maintain their relatively high levels of self-concepts as they mature. Importantly, it remains to be seen whether improving self-concepts early in development could then be maintained later, or whether self-concepts revert to previous levels, as is often found in intervention evaluations (Haney & Durlak, 1998). In their meta-analysis, O'Mara et al. (2006) found no significant attenuation of gains in self-concepts following interventions, but the longest follow-up interval was only 14 months, so it is still unclear whether the processes that promote stability of self-concepts will stabilize at these improved mean levels long-term.

Overall, this study suggests that multiple domains of self-concept are stable individual-difference characteristics. Children who have high or low self-concepts early in development tend to maintain their relative standing into early adulthood. More research is needed to understand which genetic and environmental factors maintain this stability and how they operate, and which factors could be modified to improve children's poor self-concepts.

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Key Points:

- Self-concept encompasses global as well as domain-specific self-perceptions about academics, social interactions, athletics, and physical appearance.
- This study assessed the degree to which self-concepts are stable across 20 years in multiple domains and whether stability holds independent of global self-worth and SES.
- The relatively strong stability found in multiple domains, independent of global self-worth and SES, suggests that children who feel more or less competent early in development tend to maintain those self-concepts through early adulthood.
- Specific domains of self-concept could be targeted in interventions to improve later outcomes.

Figure 1.
Summary of the covariate model.

Note. The item indicators of the self-concept factors were modeled but are excluded from the Figure for simplicity.

Table 1

Stabilities of Self-concepts across Age

	Direct Effects					Indirect Effects				
	Year 4 → 10	Year 10 → 14	Year 14 → 18	Year 18 → 24	Year 4 → 24	Year 10 → 24	Year 14 → 24	Year 18 → 24	Year 24 → 24	Year 4 → 24
Scholastic competence	.36***	.53*** / .46***	.82*** / .81***	.58*** / .63***	.09** / --	.25*** / .24***	.48*** / .51***			
Social competence	.22*	.43*** / .48***	.49*** / .48***	.59*** / .67***	.03/ --	.13** / .16**	.29*** / .32***			
Athletic competence	.39***		.82*** / .81***	.88*** / .87***	.28*** / --	--/ --	.72*** / .71***			
Physical appearance	--/ --	.35*** / .37***	.52*** / .56***	.65*** / .59***	--/ --	.11*** / .12*	.32*** / .33***			

Note. Numbers before the slashes represent test statistics controlling for child age only (to control age variation within waves), and numbers after the slashes represent test statistics controlling for child age, family SES, and global self-worth. Global self-worth was not measured at age 4, the age 4 self-concept variables were omitted from covariate analyses. Stability coefficients of .10, .30, and .50 correspond to small, medium, and large effect sizes, respectively (Cohen & Cohen, 1983, p. 61). Sample sizes ranged from 369 (athletic competence) to 372 (scholastic competence) for domains in which data were collected starting at age 4 years; sample size was 335 for physical appearance which was collected starting at age 10 years.

^aStability from year 4 to year 14. Athletic competence was not assessed at age 10.

*
p .05,

**
p .01,

p .001.