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Anticipating Their Future: Adolescent Values for the Future Predict Adult Behaviors

Andrea Finlay,

VA Palo Alto Health Care System, Stanford University

Laura Wray-Lake,

University of Rochester

Michael Warren, and

Claremont Graduate University

Jennifer L. Maggs

Pennsylvania State University

Abstract

Adolescent future values – beliefs about what will matter to them in the future – may shape their adult behavior. Utilizing a national longitudinal British sample, this study examined whether adolescent future values in six domains (i.e., family responsibility, full-time job, personal responsibility, autonomy, civic responsibility, and hedonistic privilege) predicted adult social roles, civic behaviors, and alcohol use. Future values positively predicted behaviors within the same domain; fewer cross-domain associations were evident. Civic responsibility positively predicted adult civic behaviors, but negatively predicted having children. Hedonistic privilege positively predicted adult alcohol use and negatively predicted civic behaviors. Results suggest that attention should be paid to how adolescents are thinking about their futures due to the associated links with long-term social and health behaviors.

Keywords

future values; adolescence; civic responsibility; alcohol use; British Cohort Study

In conjunction with the many social, cognitive, and biological changes in the second decade of life, adolescence is a time when individuals develop values and worldviews (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009; Flanagan, 2003; Lerner & Galambos, 1998; Wray-Lake & Syvertsen, 2011). Adolescents are also immersed in prospection; scholars are increasingly recognizing that thinking about one's future is central to structuring goals and motivating actions (Gilbert & Wilson, 2007; Seligman, Railton, Baumeister, & Sripada, 2013). Integrating a prominent theory of values (Schwartz, 1992; Schwartz et al., 2012) with the burgeoning research on adolescents' and young adults' future thinking (Luyckx, Lens, Smits, & Goossens, 2010; Peetsma & Van der Veen, 2011; Seginer, 2008; Steinberg et al.,

2009; Wakslak, Nussbaum, Liberman, & Trope, 2008), the current study tested whether adolescents' *future values* (i.e., what adolescents think will be important to them when they are adults) serve as blueprints that pattern behavior and may play a part in explaining the kinds of adults that adolescents become.

Previous research has identified long-term links between adolescents' future thinking (e.g., expectancies, aspirations, goals) and behaviors in adulthood (Beal & Crockett, 2010; Cable & Sacker, 2008; Mello, 2008; Patrick, Wray-Lake, Finlay, & Maggs, 2010). However, the majority of these studies focus on domain-specific associations. A central tenet of Schwartz's individual value theory is that values are organized into a coherent structure where compatible values are positively correlated with each other and share similar underlying motivations (e.g., benevolence and universalism both have self-transcendent motivations). Conflicting values are negatively correlated with each other and have opposing underlying motivations (e.g., power is self-enhancing whereas benevolence is self-transcendent) (Karremans, 2007; Maio, Pakizeh, Cheung, & Rees, 2009; Schwartz, 1992; Schwartz et al., 2012). Utilizing national longitudinal British data, Schwartz's theory guided predictions about within-domain and cross-domain links between adolescent future values and their later adult behaviors. The current study advances research by examining multiple values and behaviors simultaneously. Specifically, adolescents' future values were investigated in relation to relevant behaviors as adults. Adolescent future values included family responsibility, full-time employment, personal responsibility, autonomy, civic responsibility, and hedonistic privilege (i.e., self-indulgent and pleasure-seeking activities). Corresponding adult behaviors included social roles, civic behaviors, and alcohol use.

Defining Future Values

Drawing from classic conceptualizations of values (Rokeach, 1973; Schwartz, 1992), the term *future values* describes abstract beliefs concerning the perceived future importance of various modes of conduct and end states. Future values are organized into a coherent system of overarching principles that guide attitudes and behaviors (Grube, Mayton, & Ball-Rokeach, 2010; Rokeach, 1973). These values can potentially serve as an internal compass, directing adolescents in the choices they make as they transition into adulthood. Hundreds of articles from many cultures across two decades have supported the notion that values can be reduced to 10 basic value types and four higher-order value dimensions (cf. Schwartz et al., 2012). An underlying assumption of classic value theory is that values are relatively stable, enduring beliefs that should have long-lasting implications for behavior (Rokeach, 1973; Schwartz, 1992). From this perspective, some have argued that values are a key component of identity (Hitlin, 2003). With identity development as a key task of adolescence, the future values adolescents hold during these years will likely provide clues to the roles and behaviors they embrace as adults.

Future values are also part of a family of future-oriented cognitive constructs that include the related phenomena of future time perspective (Nuttin & Lens, 1985), goals (Austin & Vancouver, 1996), aspirations (Beal & Crockett, 2010), expectations (Gottfredson, 1981), future orientation (Nurmi, 1991), and possible selves (Cross & Markus, 1991). These constructs all share an assumed teleological element of motivating goal-directed action by

considering and evaluating representations of oneself in the future (Seligman et al., 2013). Among these constructs, the expected possible self is perhaps most similar to future values, that is, what one thinks will be important (Cross & Markus, 1991).

For the current study, future values are conceptualized as values that adolescents think will be important to them when they become adults. Extant research and theory offer strong impetus for hypothesizing that adolescent future values play a key role in adult behaviors. The various forms of future thinking have been shown to be important for understanding motivation and self-regulation (Block, 2014; de Bilde, Vansteenkiste, & Lens, 2011). Furthermore, future thinking has implications for many life domains such as health, social relationships, and psychological well-being (Hicks, Trent, Davis, & King, 2012; Schmid, Phelps, & Lerner, 2011; Shirai, 2012; Visser & Hirsch, 2014).

Future Value-Behavior Links

Within-domain

The organizational structure proposed by individual values theory suggests that similar values are compatible and opposing values reflect conflicting motivations (Schwartz, 1992; Schwartz et al., 2012). From this idea, it follows that values should positively predict subsequent behaviors in the same content domain (e.g., achievement values predicting achievement behaviors). Experimental evidence documents that relative to control conditions, priming each of several values (e.g., tradition, security, self-direction) was associated with higher within-domain behaviors (Maio et al., 2009). Longitudinally, within-domain associations have been found between adolescent future-oriented cognitions (i.e., future values and related constructs) and adult behaviors in the domains of education, occupation, and substance use (Mello, 2008; Ou & Reynolds, 2008; Patrick et al., 2010). For example, holding a long future time perspective within the educational domain predicts investment in learning one year later (Peetsma & Van der Veen, 2011). In other research, adolescent occupational aspirations were associated with young adult educational attainment (Beal & Crockett, 2010), as well as with adult career success as measured by income (Cochran, Wang, Stevenson, Johnson, & Crews, 2011). In the domain of substance use, adolescent positive alcohol expectancies (i.e., anticipations of pleasant effects of alcohol, including feeling happy and more friendly) predicted alcohol use and misuse in adulthood, independent of prior drinking (Cable & Sacker, 2008; Chartier, Hesselbrock, & Hesselbrock, 2011; Patrick et al., 2010).

Cross-domain

Although less studied, Schwartz's value theory also suggests that values may be positively associated with behaviors in related domains and negatively associated with behaviors in conflicting domains. In fact, value-expressive behaviors (i.e., behaviors that primarily express one value) seem to follow the same empirical structure as values (Bardi & Schwartz, 2003). For example, in Schwartz's (1992) model of values, conformity and security values are considered compatible since they share the same underlying motivation of conservation. On the other hand, a curiosity value is considered to conflict with conformity and security since it reflects an opposing motivation for openness to change. An experimental study with

young adults found that priming a given value (e.g., security) increased behaviors that express compatible values (e.g., cleanliness) and decreased behaviors that express conflicting values (e.g., curiosity; Maio et al., 2009). Another study with adolescents found that social responsibility values (a self-transcendent value type) negatively predicted substance use. This link might arise because substance use comprises the dimension of hedonism, which opposes the value dimension of self-transcendence (Wray-Lake et al., 2012). However, one-to-one correspondence between values and behavior is rare. A single value may guide a range of behaviors, or many values may influence a single behavior. For example, when voting, individuals may express a wide array of values that pertain to the various issues on the ballot (Schwartz, Caprara, & Vecchione, 2010).

Current Study

Guided by theory and extant empirical work based on Schwartz's value theory, the current study tested within-domain and cross-domain associations between future values of family responsibility, full-time job, personal responsibility, autonomy, civic responsibility, and hedonistic privilege and later behaviors. In the present study, it was predicted that adolescents' future values would positively predict adult behaviors in the same content domain, 18 years later. Future values of family responsibility were expected to predict adult social roles of marriage and parenthood. Job values were hypothesized to predict adult employment. Civic responsibility values were expected to predict adult civic actions. Hedonistic values were expected to predict adult alcohol use. Future values of civic responsibility prioritize other-oriented pursuits of participating in society, and future values of hedonistic privilege emphasize priorities that enhance self-pursuits of fun and excitement. Thus, civic responsibility values were expected to negatively predict alcohol use and hedonistic values to negatively predict civic action. Autonomy future values are compatible with other-oriented pursuits; therefore autonomy future values were expected to positively predict civic behaviors. Other cross-domain linkages between values and behaviors were examined in an exploratory manner.

Method

Sample

The British Cohort Study 1970 (BCS70) is an ongoing national longitudinal study following a cohort of individuals since birth. Of those born in one week in 1970, 98% were included in the study ($N=17,287$) (Butler, Golding, & Howlett, 1985; Ferri, Bynner, & Wadsworth, 2003; Plewis, Calderwood, Hawkes, & Nathan, 2004). Follow-up assessments were conducted at ages 5, 10, 16, 26, 30, 34, 38, and 42. The current study used data from ages 16 and 34 and included 11,545 individuals who participated in at least one of those waves (52% female).

Measures

Adolescent future values—Adolescent future values for adulthood were assessed by their responses to 12 items based on the following prompt: "How much do you think the following will matter to you when you are an adult?" measured on a three-point scale coded

as 1 = *doesn't matter*, 2 = *matters somewhat*, and 3 = *matters very much*. Six dimensions were captured, with alphas reported for multi-item scales: *Family responsibility* ($\alpha = .75$; “getting married” and “having children of my own”), “having a *full-time job*”, *individual responsibility* (i.e., “taking more responsibility for myself”), *autonomy* (i.e., “being free to decide what I want”), *civic responsibility* ($\alpha = .58$; “being able to vote”, “taking an active part in politics”, and “being involved in the local community”), and *hedonistic privilege* ($\alpha = .66$; “having more fun”, “being able to go to nightclubs”, “being legally able to drink alcohol in public”, and “going to X-rated films”). The correlations among the future values were relatively small, ranging from .02 to .16, and all were significant ($p < .05$ to $p < .001$) except that civic responsibility was not correlated with having a full-time job.

Social roles—As adults, individuals were asked about their partnership, parenting, and employment roles. *Marital status* was coded as 0 = *never married* (single, cohabiting) and 1 = *ever married* (married, separated, divorced, widowed). The corresponding adolescent future value was “getting married”, thus, individuals who made the commitment to marry were distinguished from cohabiting individuals. *Parenthood* was coded as 0 = *no children* and 1 = *any biological, adopted, or step children*. *Employment* assessed an individual’s full-time job status (0 = *no*, 1 = *yes*).

Civic behaviors—Cohort members responded as adults about their civic behaviors. Individuals were asked if they *voted* in the last general election, which had occurred three years earlier in 2001 (0 = *no*, 1 = *yes*), and if they had been members of any *organizations* (e.g., politics, human rights, voluntary groups) in the past 4 years (0 = *no*, 1 = *yes*). Cohort members were asked about four *political activities* (contact government or public official, attend a public meeting or rally, take part in a demonstration or protest, sign a petition; 0 = *no* to all 4 items, 1 = *yes* to 1 or more items). *Political interest* measured how interested individuals were in politics. Response options were coded as 1 = *not at all interested*, 2 = *not very interested*, 3 = *fairly interested*, and 4 = *very interested*.

Alcohol use—Alcohol use frequency, quantity, and alcohol problems in adulthood were assessed. *Frequency* measured how often the cohort member had an alcoholic drink. Response options were 0 = *never*, 1 = *only on special occasions*, 2 = *2 to 3 times a month*, 3 = *once a week*, 4 = *2 to 3 days a week*, and 5 = *on most days*. *Units* reflected the number of standard units of alcohol consumed in the past week (e.g., glasses of wine, pints of beer). Problem drinking was assessed using the *CAGE* (Mayfield, McLeod, & Hall, 1974; Smart, Adlaf, & Knoke, 1991) for *lifetime* and *past year* incidence of four types of problems due to alcohol use (e.g., “people annoyed you by criticizing your drinking”). Individuals who answered yes to 1 or more of 4 CAGE questions were coded as 1 (*problem drinking*) and all other individuals were coded as 0 (*no problem drinking*).

Demographic control variables—*Gender* was coded as 0 = *female*, 1 = *male*. Cohort members’ fathers’ and mothers’ *social class* was assessed at each childhood wave with the Registrar General’s social class measure, which codes job status of current or most recent job along with associated education, prestige, and lifestyle (Marsh, 1986; OPCS, 1980). Highest social class reported by either parent at ages 0, 7, 11, or 16 was utilized in analyses.

The six social class categories were coded into four categories: *professional or managerial/technical, skilled non-manual, skilled manual*, and *semi-skilled or unskilled*. This four category variable was dummy coded for analyses with skilled manual as the reference group because this was the largest social class of the four categories.

Additional adolescent control variables—Relevant adolescent behaviors were included in analyses as controls. *Employment* measured whether an individual held a job during the school term (0 = *no*, 1 = *yes*). Civic behaviors included how often cohort members spent their spare time during adolescence at a *political club* or doing *volunteer* or community work, each with response options of 1 = *rarely or never*, 2 = *less than once a week*, 3 = *once a week*, and 4 = *more than once a week*. *Frequency of alcohol use* measured how often in the past year a cohort member drank alcohol; 0 = *never drink*, 1 = *special occasions only*, 2 = *about once a month*, 3 = *about once a week*, 4 = *2 to 3 times a week*, 5 = *4 to 5 times a week*, and 6 = *every day or most days*. *Units of alcohol* assessed the number of standard units of alcohol of any kind consumed in the past week. *Heavy drinking* was assessed as consuming 4 or more drinks in a row in the past two weeks (0 = *no*, 1 = *yes*).

Analytic Plan

To reduce bias to inferences due to missing data, data were multiply imputed using the expectation maximization (EM) algorithm in SAS Proc MI (Graham, 2009). Imputation models included all items used for the current study, measures of the same constructs assessed at other waves (where available), and a few auxiliary variables showing moderate correlations with key study variables. The MI procedure was determined to be acceptable given relative efficiency estimates in regression models of 98% or above, as well as the lack of disturbance in trace and autocorrelation plots of imputed values (Graham, 2009). Descriptive statistics were examined using the EM dataset and analyses were conducted using 40 imputed datasets with results averaged across datasets.

First, descriptive statistics of means and standard deviations and Pearson correlations between adolescent future values and adult behaviors were examined. Next, standard multiple regression models examined the extent to which adolescent future values predicted adult social roles, civic behaviors, and alcohol use, controlling for adolescent gender and social class in all models. Adolescent employment, civic behaviors, and alcohol use were controlled in models for adult full-time job, civic behaviors, and alcohol use, respectively. Linear regression was used for continuous outcomes, and logistic regression for dichotomous outcomes.

Results

Descriptive Statistics

Adolescent future values were correlated with adult behaviors as displayed in Table 1. Significant correlations were predominately within domains, but there were some significant cross-domain associations. For example, endorsing the future values of having a full-time job was significantly associated with a higher frequency of alcohol use, whereas the future value of personal responsibility was negatively correlated with frequency of alcohol use.

Future values of civic responsibility positively predicted all adult civic behaviors as well as units of alcohol but were negatively associated with having children. Future values of hedonistic privilege were positively associated with all adult alcohol use and problems and negatively correlated with being an organizational member.

Adult Social Roles

Results of regression models predicting adult behaviors as a function of adolescent future values are presented in Table 2. For all models, gender and social class were controlled. Adolescent employment, civic behaviors, and alcohol use were controlled in models for adult full-time job, civic behaviors, and alcohol use, respectively. The residual errors for each outcome were examined and found to be normally distributed. Predicting adult social roles, adolescents who endorsed future values of family responsibility had greater odds of marrying and of having children by the age of 34, but lower odds of having a full-time job. Adolescents who endorsed future values of civic responsibility had lower odds of having children by their mid-30s.

Civic Behaviors in Adulthood

Future values of autonomy, civic responsibility, and hedonistic privilege predicted adult civic behaviors (Table 2). Future autonomy values predicted greater odds of political activity involvement and higher levels of political interest. Adolescents who believed civic responsibility would be important to them as adults had greater odds of being members of an organization, voting, and engaging in political activities, and took a greater interest in politics as adults. Adolescents who endorsed future values of hedonistic privilege had lower odds of being members of an organization and voting, and indicated less interest in politics as adults.

Alcohol Use in Adulthood

Future values of hedonistic privilege in adolescence predicted greater adult alcohol use (Table 2). Individuals who as adolescents had more strongly endorsed hedonistic privilege tended, as adults, to drink more frequently, to consume more units of alcohol, and had higher odds of reporting problem drinking.

Discussion

Consistent with Schwartz's values theory (Schwartz, 1992; Schwartz et al., 2012), results of data from a national longitudinal British sample indicated evidence of associations between adolescent future values and adult behaviors across 18 years of development, longer than the lived experience of participants when they were surveyed in adolescence. Overall, the findings support the view that adolescents' beliefs about the values they will hold in adulthood predict role attainment and behaviors in adulthood. These results also document the potential utility of Schwartz's model to *future values* adolescents think they will have as adults.

Importantly, links between adolescent future values and their behaviors in adulthood held even after controlling for gender, social class, related adolescent behaviors, and other future

values, providing rigorous tests of the unique effects of each future value on later behavior. Each longitudinal link was thoroughly tested in the study by including all future values simultaneously in the models, which accounts for shared measurement variance in values and also any shared substantive variance among the value types. Controlling for shared measurement variance is particularly important, as research has shown that individuals are prone to giving socially desirable responses to values items (Fisher & Katz, 2000). The current study highlights the importance of adolescent future values for understanding what kinds of adults they become.

Theory-Derived Links

Consistent with Schwartz's theory (Schwartz et al., 2012) that compatible values and behaviors sharing similar underlying motivations should be positively associated and conflicting values and behaviors with opposing motivations should be negatively correlated, the majority of within-domain hypotheses regarding future value-behavior compatibility were supported empirically. Family future values predicted greater likelihood of marriage and having children, civic future values predicted multiple civic behaviors, and hedonistic future values predicted several indices of alcohol use in adulthood. Also, as predicted, autonomy future values positively predicted elements of the compatible value in adulthood (i.e., political activities and interests). However, results were not as consistent for future values related to work and personal responsibility. The intervening years between ages 16 and 34 include diverse life experiences (e.g., college, military service, marriage, parenthood, work) that could transform previous behavior patterns and values (Elder & Shanahan, 2006). Nevertheless, overall, adolescent future values seem to play a significant role in patterning roles and behaviors in theoretically meaningful ways nearly two decades into the future.

While Schwartz's model helps describe and predict the pattern of relationships between values and behaviors, other social psychological theories (e.g., Cross & Markus, 1994; Fishbein & Ajzen, 1975; Schwartz et al., 2010) offer potential mechanisms through which values may structure behavior so far into the future. Classical value theory assumes that values are stable and enduring (Rokeach, 1973; Schwartz, 1992) and may be a part of identity (Hitlin, 2003). For example, Nurmi (1991) argued that adolescent thinking about the future plays a role in concurrent identity formation (see also Luyckx et al., 2010). Thus, it is possible that future values influence later behaviors through identity development that guides behavioral choices. Another possibility is that some of the findings (the non-hedonistic value-behavior associations in particular) were driven by the motivating influence of one's future time perspective. Specifically, since having an extended future time perspective is associated with higher perceived worth in one's future goals (Lens, Paixao, Herrera, & Grobler, 2012; Nuttin & Lens, 1985), higher scores on each of the future value measures might signify having a longer future time perspective within the domain measured. If so, on the basis of future time perspective theory (Lens et al., 2012; Nuttin & Lens, 1985), one would expect to find increases in the perceived instrumentality of present value-relevant behaviors, forming strong means-ends structures that persist over time.

Hedonistic values are closely associated with having a more present-oriented, rather than future-oriented, time perspective (Zimbardo & Boyd, 1999), and a cross-sectional study of

college students found that students with stronger tendencies to seek pleasure reported greater alcohol use (Daugherty & Brase, 2010). Less consideration for the future has also been associated with more hazardous alcohol consumption (Beenstock, Adams, & White, 2011). The current study found that holding stronger hedonistic values in adolescence was associated with more alcohol use and higher odds of alcohol problems 18 years into the future. Thus, individuals with hedonistic values may engage in activities with immediate pleasurable benefits instead of considering the long-term consequences of health-risk behaviors such as alcohol use. Perhaps since hedonistic values by definition require little self-regulation, long-term value-behavior links within this domain are relatively easy to maintain despite intervening developmental experiences. Addressing and reframing thinking related to alcohol use and other hedonistic behaviors during adolescence may help mitigate long-term links with problematic drinking. Studies suggest that while values are relatively stable, they are also malleable to change (Maio et al., 2009). Additionally, based on laboratory findings that *decreases* in a given behavior can result from *priming* values that conflict with that behavior (Maio et al., 2009), perhaps prevention or intervention programs that focus on self-transcendent values may find success in reducing alcohol use behaviors.

Indeed, some support was found for the cross-domain hypotheses, in which hedonistic future values (reflecting a self-enhancement motivation) in adolescence were negatively related to three of the four civic behaviors (reflecting self-transcendence) in adulthood. However, adolescent civic responsibility future values did not predict adult alcohol use, perhaps because drinking alcohol in adulthood is a normative behavior.

Exploratory Links

In addition to theory-derived predictions, cross-domain links were examined in an exploratory fashion. Family future values predicted a lower likelihood of holding a full-time job in adulthood. Given that family future values were associated with greater likelihood of having children, it could be that parents with young children (particularly mothers) are less likely to hold full-time employment. Although values may crystallize in adolescence, the contexts in which individuals express these values are dynamically shifting. For individuals who have children, the most pressing needs may be focusing on childrearing while the ability to work fulltime may reemerge as their children grow older. In addition, civic future values in adolescence predicted a lower probability of having children by age 34.

Individuals in this sample may have chosen to delay parenthood or to not have children if they had greater civic or other instrumental commitments. Once individuals have children, however, studies show inconsistent evidence about whether civic engagement and family formation are incompatible (e.g., Rotolo & Wilson, 2007; Voorpostel & Coffe, 2012).

Clearly, the associations between civic engagement, family, and employment are complex and closer examination of the various competing demands of these roles, perhaps using a person-oriented approach, is warranted.

It is notable that multiple future values (i.e., autonomy, civic, hedonistic) were related to adulthood civic behavior. This pattern of findings calls to mind the developmental notion of equifinality, which argues that individuals with multiple, distinct characteristics can end up

with the same developmental outcome (Cicchetti & Rogosch, 1996). Empirically, multiple value types have been shown to predict voting among adults (Barnea & Schwartz, 1998).

Values are often, but not always, related to corresponding behaviors, and often values predict behaviors theorized to be expressive of other values (Bardi & Schwartz, 2003). In line with this prior work, cross-domain findings, albeit limited, suggest that values in different domains do matter to behavior. These empirical findings of cross-domain effects, while not predicted *a priori*, seem potentially interpretable in parsimonious and logical ways. These effects were small, suggesting that future values may be weak and distal determinants of behaviors that, on the surface, are not directly guided by the particular value. Given the logical explanations and the previous theoretical and empirical precedents (e.g., Bardi & Schwartz, 2003), the exploratory cross-domain links may not be merely anomalous chance events.

Transition to Adulthood in Context

The second half of the twentieth century has witnessed an elongation and diversification of the transition to adulthood (Bynner, 2005; Settersten, 2007), such that the present cohort, who moved into adulthood in the last decade of the 20th century, made later and less predictably sequenced transitions into adult roles such as marriage, parenthood, and employment (Benson, 2014). This group completed their educations at times of rising social and economic inequality as well as higher unemployment than prior British birth cohorts (Machin & Vignoles, 2004; Schoon, 2010), thus some experienced considerable challenges in attaining financial independence and stability. In this context, the present results nonetheless point to the enduring predictability of individual values in foreshadowing, though of course not determining—important roles and behaviors 18 years later.

Limitations

There are a few limitations to the current study, including sample size, measurement limitations, and the unidirectional approach to analyses. Due to attrition and a teacher's strike at the adolescent wave, the sample size was reduced from the original birth cohort (Ketende, McDonald, & Dex, 2010). However, given that the study was drawn from a national sample and the teacher's strike was a random event occurring throughout Britain, results may still be generalizable to the British population of that era. Similar research in other cultural contexts would bolster the evidence for the role of adolescent future values in predicting future behavior.

There are likely other domains of future values that are important to adolescents that were not measured in the current study. Although the current study did not capture the full range of future values, the measures aligned well with common conceptualizations of adulthood (Arnett, 2001) and the types of expectations adolescents report having for the future (Nurmi, 1991), contributing to extant literature on the topic. In-depth and mixed-methods approaches with adolescents may augment these results by identifying a full range of general and idiosyncratic future values. Clarifying the temporal frame of future values and collecting multiple assessments may be additional steps for future research.

Future analyses could be strengthened by including adolescent measures of the behaviors that were included in adulthood, testing the bidirectionality of values and behaviors, and using future values measures with stronger internal consistencies. Analyses controlled for adolescent measures of the behaviors assessed in adulthood where possible, but relevant measures were limited at the adolescent wave. Thus, adolescent behavior may be a third variable explaining both future values and later behaviors. In addition, the analyses took a unidirectional approach to examining value-behavior links over time. Models that test bidirectionality would likely also add to extant understanding of these developmental processes across adolescence and adulthood. In fact, links from behaviors to values are equally plausible based on theory (Bem, 1972) and empirical work (Beal & Crockett, 2010). Finally, measures were limited in that their internal consistencies were low. Despite the limitations of the available measures, the true correlations between adolescent values and adult behaviors are likely underestimated by the attenuated results obtained with less reliable measures. Such limitations and the long time period between study waves make the associations between adolescent values and adult behaviors all the more impressive.

Implications and Conclusion

Taken together, these findings highlight the importance of adolescent future values for understanding the adults that they become. By implication, adults should be more conscious of how the adolescents around them are thinking about their futures and reflect more on how these future values develop. Whereas certain future values (e.g., civic and autonomy values) portend socially responsible behaviors in adulthood, other values – particularly hedonism – seem to reflect an orientation toward adulthood that is more potentially harmful to health, as hedonistic future values related to more frequent drinking, higher quantities of alcohol consumed, and evidence of problem drinking behaviors in adulthood. To the extent that hedonistic future values are maladaptive, it might make sense to utilize interventions designed to develop a longer future time perspective (e.g., Peetsma & Van der Veen, 2011). Another promising approach is to develop and evaluate interventions that seek to indirectly decrease hedonistic future values by nurturing self-transcendent values (see Maio et al., 2009). Efforts to prevent hedonistic future values may have long-term benefits for individuals and society.

Social norms, peer interactions, as well as the direct socialization efforts of parents, teachers, and other adults likely play a role in future value formation (see Nurmi, 1991). The present findings underscore the long-term importance of the values held during adolescence as precursors to adult social and health behaviors, and suggest that efforts to support the development of positive values across childhood and adolescence have enduring merit. Identifying the social and cultural contexts that may inculcate certain kinds of future values can have implications for both the prevention and promotion of particular future values. Given these long-term associations, adults who interact with youth should seize opportunities to ask youth about their future values. Open climates for youth to discuss future values with adults could provide a forum for adults and youth to learn from each other and for adults to contribute to adolescents' development into well-rounded, socially responsible adults.

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Table 1
Descriptive Statistics and Correlations: Adolescent Future Values for Adulthood and Adult Outcomes

Adult outcomes	M/SD	Adolescent future values				
		Family responsibility	Full-time job	Personal responsibility	Autonomy	Civic responsibility
Ever married	0.60/0.49	.07***	.00	.02	.02	.01
Any children	0.63/0.48	.06***	.01	.00	.01	-.03**
Full-time job	0.65/0.48	-.03**	.05**	-.04*	-.01	.03*
Organizational member	0.49/0.50	.02	-.01	.02	.01	.05***
Voting	0.63/0.48	.01	.00	.02	.01	.10***
Political activities	0.34/0.47	-.02	-.02	.02	.02*	.06***
Political interest	2.29/0.82	.00	-.01	.01	.04**	.18***
Frequency of alcohol use	3.03/1.49	.03	.02	-.01	.02*	.03*
Units of alcohol consumed	10.21/13.87	.00	.03*	-.02*	.03	-.01
CAGE – lifetime	0.29/0.46	.00	.00	-.01*	.01	.02
CAGE – past year	0.23/0.42	.01	.01	-.01	.01	.01

Note. $N = 11,545$. All adolescent future values are on a 3-point scale, ranging from 1 = *doesn't matter*, 2 = *matters somewhat*, and 3 = *matters very much*. For adult outcomes, ever married, any children, full-time job, organizational member, voting, political activities, CAGE-lifetime, and CAGE-past year are on a scale of 0 = *no* to 1 = *yes*. Political interest ranges from 1 = *not at all interested*, 2 = *not very interested*, 3 = *fairly interested*, and 4 = *very interested*. Frequency of alcohol use ranges from 0 = *never*, 1 = *only on special occasions*, 2 = *2 to 3 times a month*, 3 = *once a week*, 4 = *2 to 3 days a week*, and 5 = *on most days*. Units of alcohol consumed ranges from 0 to 74 units. For each variable, higher scores signify more of that quality.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2
Adolescent Future Values for Adulthood Predicting Adult Social Roles, Civic Behaviors, and Alcohol Use

Adolescent future values	Adult social roles					
	Marital status		Children		Full-time job	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Family responsibility	1.21***	(1.14, 1.35)	1.19***	(1.13, 1.33)	0.91**	(0.80, 0.95)
Full-time job	1.00	(0.92, 1.21)	1.10	(0.96, 1.24)	1.16	(0.95, 1.26)
Personal responsibility	1.04	(0.91, 1.13)	0.93	(0.88, 1.08)	0.98	(0.90, 1.13)
Autonomy	1.08	(0.89, 1.14)	1.00	(0.88, 1.11)	1.02	(0.94, 1.21)
Civic responsibility	1.04	(0.94, 1.17)	0.88*	(0.79, 0.98)	1.05	(0.97, 1.22)
Hedonistic privilege	0.90	(0.83, 1.06)	1.10	(0.93, 1.16)	0.94	(0.84, 1.06)

Adolescent future values	Adult civic behaviors					
	Organizational member		Voting		Political activities	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Family responsibility	1.04	(0.92, 1.08)	1.02	(0.96, 1.08)	0.93	(0.87, 1.03)
Full-time job	0.97	(0.83, 1.06)	0.99	(0.97, 1.21)	0.94	(0.80, 1.04)
Personal responsibility	1.05	(0.94, 1.15)	1.06	(0.93, 1.11)	1.05	(0.92, 1.13)
Autonomy	1.08	(0.95, 1.16)	1.02	(0.95, 1.19)	1.09*	(1.00, 1.25)
Civic responsibility	1.19***	(1.15, 1.42)	1.46***	(1.33, 1.60)	1.29***	(1.15, 1.44)
Hedonistic privilege	0.74***	(0.79, 0.87)	0.90*	(0.77, 0.95)	0.90	(0.81, 1.02)
R^2						0.08
F						79.06***

Adolescent future values	Adult alcohol use					
	Frequency		Units consumed		CAGE lifetime	
	B	(SE)	β	(SE)	OR	(95% CI)
Family responsibility	0.03	(0.03)	0.00	(0.27)	1.00	(0.87, 1.03)
Full-time job	0.00	(0.04)	0.01	(0.44)	0.98	(0.85, 1.15)
					1.05	(0.85, 1.20)

Adolescent future values	Adult alcohol use					
	Frequency	Units consumed		CAGE lifetime		CAGE annual
	B	(SE)	β	(SE)	OR	(95% CI) OR
Personal responsibility	0.00	(0.04)	0.01	(0.35)	1.00	(0.85, 1.04) 0.96 (0.85, 1.06)
Autonomy	0.02	(0.04)	0.03	(0.37)	1.05	(0.95, 1.20) 1.06 (0.92, 1.18)
Civic responsibility	0.02	(0.04)	-0.03	(0.35)	1.05	(0.95, 1.19) 1.01 (0.91, 1.17)
Hedonistic privilege	0.03*	(0.04)	0.04**	(0.42)	1.05*	(1.01, 1.30) 1.09** (1.06, 1.41)
R^2	0.08		0.13			
F	74.39***		135.54***			

Note. $N = 11,545$. $OR = Odds\ ratio$. $CI = Confidence\ interval$. $\beta = Standardized\ coefficient$. $SE = Standard\ error$. All adolescent future values are on a 3-point scale, ranging from 1 = *doesn't matter*, 2 = *matters somewhat*, and 3 = *matters very much*. For adult outcomes, ever married, any children, full-time job, organizational member, voting, political activities, CAGE-lifetime, and CAGE-past year are on a scale of 0 = *no* to 1 = *yes*. Political interest ranges from 1 = *not at all interested*, 2 = *not very interested*, 3 = *fairly interested*, and 4 = *very interested*. Frequency of alcohol use ranges from 0 = *never*, 1 = *only on special occasions*, 2 = *2 to 3 times a month*, 3 = *once a week*, 4 = *2 to 3 days a week*, and 5 = *on most days*. Units of alcohol consumed ranges from 0 to 74 units. For each variable, higher scores signify more of that quality. All models control for gender and social class. Adolescent employment, civic behaviors, and alcohol use were controlled in models for all full-time job, adult civic behaviors, and adult alcohol use, respectively.

* $p < .05$.

** $p < .01$.

*** $p < .001$.