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**COMBINATIONS OF CIVIC ENGAGEMENT, FREE TIME, AND ALCOHOL USE
DISCRETIONARY ACTIVITIES IN U.S. AND BRITISH ADOLESCENT SAMPLES:
LINKS WITH ADULT CIVIC ENGAGEMENT**

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by
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ABSTRACT

Events, choices, and experiences that occur during adolescence may have lasting effects on the developing person (Lerner, 1982). Engagement in discretionary activities, defined here as activities that are not necessarily school- or work-related, is important not only for the immediate health and well-being of youth, but also for long-term positive health. For example, experiences during adolescence shape civic commitments thereafter and, beyond individual outcomes, a healthy democracy rests on the participation of its citizens. In addition, the experiences and opportunities adolescents have may be influenced by the historical time in which they live, which may differentially shape their lives. The current dissertation sought to identify combinations of civic engagement, free time, and alcohol use discretionary activities across 12 cohorts of adolescents in the U.S. and in 1 birth cohort of adolescents in Britain, to compare U.S. and British adolescents, and to investigate the longitudinal implications that combinations of discretionary activities among British adolescents have for civic engagement in adulthood. Four research aims were explored in two studies. Study 1 used nationally representative data of U.S. adolescents who participated in the annual Monitoring the Future surveys (Johnston, O'Malley, Bachman, & Schulenberg, 2009) to: (1) Describe U.S. adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities; and (2) Examine whether and how U.S. adolescents' combinations of discretionary activities differed across 4 decades. Study 2 used nationally representative data of British adolescents participating in the longitudinal British Cohort Study (Butler, Golding, & Howlett, 1985) to: (3) Describe British adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities and examine whether these combinations replicated those found in the U.S. samples; and (4) Investigate whether British adolescents' combinations of discretionary activities predicted

differences in civic engagement in adulthood at ages 26, 30, and 34. In both studies, 3 types of adolescent discretionary activities were examined: *civic engagement*, which captured activities that expressed a commitment to society and the well-being of others; *free time*, which included activities that were part of adolescents' daily lives but that did not contain an inherent commitment to society; and *alcohol use*, which represented experimentation with potential risks to health. Person-centered analyses were utilized to describe different combinations of discretionary activities. By exploring the heterogeneity of youth experiences and whether these combinations of discretionary activities predicted civic engagement in adulthood, we may gain insight into the constellation of discretionary activities that may be important to adolescent development, particularly for subgroups of youth who vary from the general trend.

To pursue the first and second research aims, cross-sectional nationally representative survey responses from 12th grade adolescents participating in the annual U.S. Monitoring the Future study (Johnston et al., 2009) were used to identify and explore combinations of discretionary activities. Data were obtained near the midpoints of 4 historical decades from the 1970s to 2000s, specifically 1976-1978, 1986-1988, 1996-1998, and 2006-2008. First, adolescent combinations of civic engagement, free time, and alcohol use discretionary activities were described using latent class analysis, a person-centered approach that identifies differences in subgroups of people within a population based on individual characteristics. Second, variations in combinations of discretionary activities across the 4 decades were tested. After establishing the optimal solution within each decade, the 4 decades were combined and a measurement invariance test was conducted to determine if the optimal solution across decades reflected the same number and characteristics of classes. Among girls, 4 latent classes were found in each decade and across decades: *low-involved*, *noncivic drinkers*, *civic abstainers*, and *civic drinkers*.

Among boys, there were differences across decades. The 1970s decade reflected 3 combinations of activities: *noncivic drinkers*, *civic abstainers*, and *civic drinkers*. The later 3 decades showed these 3 classes plus a 4th, *low-involved*.

To address the third and fourth research aims, longitudinal data from an ongoing nationally representative sample of British individuals (British Cohort Study) who have been followed from birth in 1970 through age 38 was utilized. For the third aim, latent class analysis was used to identify British adolescents' combinations of discretionary activities and to examine whether these combinations replicated those established in the U.S. adolescent samples. For the fourth aim, logistic regression was utilized to predict civic engagement in adulthood at ages 26, 30, and 34 from the British adolescents' latent classes. Results identified in the Britain sample did not replicate those established in the U.S. samples; there were fewer latent classes found for both girls and boys in Britain and some of the characteristics of the classes differed, although the overall impression was the same. Among British girls and boys, there were 3 classes; *low-involved*, *noncivic drinkers*, and *civic drinkers*. Logistic regression results indicated that compared to low-involved adolescents, girls and boys in the noncivic drinkers class were less likely to engage in high levels of civic activities as adults, including political interest, voting, and social trust. In contrast, girls and boys in the civic drinkers class were more likely to engage in high levels of civic activities – including political interest, voting, organizational and union membership, and civic action – compared to their low-involved counterparts.

The discussion for Study 1 considers the prevention implications of these results. Youth in the noncivic drinkers class may be at risk for alcohol-related problems because their time may be taken up with little else, whereas adolescents in the civic drinkers class may attenuate the health risks of heavy drinking through their participation in other activities. Volunteering is

common across the samples, likely due to school requirements and normative pressures, but other civic activities are relatively rare among all youth suggesting that increasing the number of required civic activities may boost engagement in this area. The discussion for Study 2 considers alternative explanations for the observed differences in discretionary activity combinations between the U.S. and Britain, including differences in sampling, measurement, opportunities for activity participation, age differences, and cultural context. Longitudinal results are discussed in light of potential mechanisms that may explain adult differences between the groups. For both studies, future research examining differences among the classes on adult outcomes, such as health, work, and identity development, are needed.

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CHAPTER 1: GENERAL INTRODUCTION

Events, choices, and experiences that occur during adolescence may have lasting effects on the developing person (Lerner, 1982). Discretionary activities, defined here as activities that are not necessarily school- or work-related, allow adolescents to explore their values and worldviews as well as to gain and practice civic skills and build connections with the broader society (Fredricks & Eccles, 2006; Larson, 2001; Lerner & Galambos, 1998; Otto, 1976; Steinberg & Morris, 2001). Notwithstanding such potential benefits, adolescents commonly engage in behaviors that pose risks for health and achievement. In this dissertation, civic engagement, free time, and alcohol use were examined. Engagement in these discretionary activities may have implications not only for the health and well-being of individuals, but also for the health of a democratic society. Adolescent discretionary activities were explored here in two ways. First, we identified combinations of discretionary activities among 12th grade female and male adolescents in the U.S. across four decades from the 1970s to the 2000s. Second, combinations of discretionary activities were identified among 16-year-old female and male adolescents in Britain from the mid-1980s. These combinations were compared with U.S. adolescents' combinations and were used to predict differences in civic engagement in adulthood through age 34.

Four research aims were explored in two studies, both of which used person-centered analyses to examine adolescents' combinations of discretionary activities. Study 1 used nationally representative data of U.S. adolescents who participated in the annual Monitoring the Future surveys (Johnston et al., 2009) to: (1) Describe U.S. adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities; and (2) Examine whether and how U.S. adolescents' combinations of discretionary activities differed across four decades.

Study 2 used nationally representative data of British adolescents participating in the longitudinal British Cohort Study (Butler et al., 1985) to: (3) Describe British adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities and examine whether these combinations replicated those found in the U.S. samples; and (4) Investigate whether British adolescents' combinations of discretionary activities predicted differences in civic engagement in adulthood at ages 26, 30, and 34.

In Study 1, U.S. adolescents' combinations of discretionary activities were established using latent class analysis, a technique that describes differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). It was hypothesized that in the U.S. samples there would be a class of youth who did not participate in any activities (uninvolved), a class who played sports activities (sports-only), and a class of youth who participated in all activities (highly-involved). Historical differences in the U.S. were explored without *a priori* hypotheses. In Study 2, latent class analysis was utilized to identify British adolescents' combinations of discretionary activities. Logistic regression analyses were used to predict adult civic engagement from the British adolescents' latent classes. The same three classes were hypothesized to exist in the British sample: uninvolved, sports-only, and highly-involved. Youth classified as highly-involved were hypothesized to have higher rates of civic engagement in adulthood compared to youth classified as sports-only or uninvolved. Youth who were involved in a wide range of activities might have had more opportunities through their various activities to gain civic skills or develop social networks that would continue to recruit them into civic life. This recruitment could have occurred in civic engagement settings such as volunteering, but also through relationships developed through other activities such as sports or alcohol use. Though the current study did not directly test the mechanisms that might explain the

connections between combinations of discretionary activities in adolescence and civic engagement in adulthood, the possible results could draw attention to the importance of examining these combinations.

Conceptual Framework

The overarching conceptual framework of the current study is the lifespan developmental perspective which emphasizes constancy and change throughout the life course (Baltes, 1987; Baltes, Reese, & Nesselroade, 1977; Lerner & Castellino, 2002). There are seven key concepts of lifespan development (Baltes, 1987); three were utilized to guide interpretation of analyses.

Multidimensionality

First, multidimensionality is defined as plurality in development, rather than a single measure of growth (Baltes, 1987). Adolescents fill a variety of roles while in school including attending class, having a job, spending time with peers, participating on a team, and attending religious services with family members or friends. Study 1 investigated multidimensionality by exploring combinations of civic engagement, free time, and alcohol use discretionary activities in samples of U.S. and British adolescents. Rather than measuring outcomes based on the number of activities an adolescent was involved in, we described the various combinations of activities that could have contributed to the adolescents' development.

Historical Embeddedness

Second, the historical and cultural milieu in which a person lives influences the process of development (Baltes, 1987). Historical embeddedness was explored in Study 1 through examination of 12th grade adolescents in the U.S. across four decades, the 1970s-2000s. Differences across decades in combinations of discretionary activities as well as prevalence rates

in participation were documented. Different classes across decades may reflect a shift in interest in certain activities or in the availability of certain activities over time.

Development as a Lifelong Process

Third, lifespan development is defined as lifelong with continuous and discontinuous processes at work at each stage of development (Baltes, 1987; Baltes et al., 1977). Not all processes of change begin at infancy or childhood, but some originate at later periods in the lifespan. For example, involvement in activities and community-based organizations in adolescence may plant the seeds of adult civic participation through connections with others and the development of a collective identity (Flanagan, 2003). In Study 2, development was conceptualized as a lifelong process by testing whether combinations of discretionary activities in adolescence predicted civic engagement longitudinally into early and middle adulthood as long as 18 years later. Different combinations of discretionary activities may provide diverse experiences and social networks for youth which may explain variations in levels of civic engagement in adulthood.

Literature Review

Discretionary activities are an important part of the adolescent years and provide opportunities for growth and development rarely found elsewhere in youth's lives (Larson, 2001). On average, adolescents spend more than four hours a day involved in discretionary activities including volunteering, socializing, sports, religion, relaxing, and recreation (U.S. Bureau of Labor Statistics, 2007). The current study focused on three types of discretionary activities. First, *civic engagement* captured activities that expressed a commitment to society and the well-being of others, including volunteering, voting, and civic action (e.g., signed a petition, attended a public meeting or rally). Second, *free time* included activities that were part of

adolescents' daily family and school lives but that did not contain an inherent commitment to society. For the purposes of this study, free time activities included hobbies, socializing, sports, and religious services. Third, *alcohol use* represented experimentation with potential risks to health and included two measures: annual alcohol use and heavy drinking in the prior two weeks.

Outcomes Associated with Discretionary Activities

Experiences with a variety of discretionary activities during the adolescent years are linked with positive and negative outcomes, both in adolescence and adulthood (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999; Fredricks & Eccles, 2006; Otto, 1976). Civic engagement, including volunteering, voting, petitioning, and community participation (e.g., attending local community meetings), has been associated with social well-being, identity development, lower mortality and depression rates, and better cognitive functioning in adolescents and adults (Albanesi, Cicognani, & Zani, 2007; Cicognani et al., 2008; Denny & Doyle, 2007; Harris & Thoresen, 2005; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Musick, Herzog, & House, 1999; Pancer, Pratt, Hunsberger, & Alisat, 2007).

Free time activities show mixed results across various outcomes. For example, participants in sports or school-related activities (e.g., school government, pep club) during adolescence had completed more years of education six years after high school as compared to nonparticipants (Barber et al., 2001; Eccles, Barber, Stone, & Hunt, 2003). Additionally, athletes had lower levels of social isolation, and youth who volunteered or attended religious services had higher rates of self-esteem than nonparticipants. However, negative outcomes observed in the same sample included higher rates of marijuana use and more suicide attempts among school-related (e.g., school government, pep club) and performing arts (e.g., drama, dance) activity participants as compared to nonparticipants.

Alcohol use and particularly heavy drinking predict a broad range of short-term and long-term problems, including academic problems, drunk driving accidents, depression, suicidal ideation and attempts, relationship difficulties, alcohol-related injuries, and sexual assault among adolescents and young adults (Brown et al., 2008; Centers for Disease Control, 2003; NIAAA, 2003; U.S. Department of Health and Human Services, 2007; Windle, Miller-Tutzauer, & Domenico, 1992). Although research has predominately focused on, and documented, *negative* consequences of adolescent and young adult alcohol use and heavy drinking, some studies focusing on adults rather than adolescents have highlighted some *positive* links between light-to-moderate alcohol use and health, work, or civic outcomes. Health studies have found that light-to-moderate adult drinkers had lower morbidity and mortality rates across multiple indicators (e.g., chronic illness, cardiovascular health, psychological distress, accident/injury rates) as compared to heavy drinkers or abstainers (Gunzerath, Faden, Zakhari, & Warren, 2004; Klatsky, 1999; Rehm, 2000; San José, van de Mheen, van Oers, & Mackenbach, 1999), although some health effects are linear (Wannamethee & Shaper, 1998). Light-to-moderate adult drinkers also had better wages and occupational mobility (French & Zarkin, 1995; MacDonald & Shields, 2000) and were more likely to vote (Denny & Doyle, 2007) than their counterparts who abstained or engaged in heavy drinking. Whether these positive links between alcohol use and health, work, and civic outcomes observed among adults exist among adolescents and young adults has yet to be documented. Taken together, these results suggest that adolescents may be influenced by a variety of discretionary experiences, but focusing on relationships between two activities at a time obscures the diversity of activities adolescents may engage in during their formative years.

Engagement in Multiple Discretionary Activities

Most prior studies are limited by their focus on links between single activities and outcomes of interest, without explicitly recognizing that individuals may participate simultaneously and sequentially in a multitude of developmental promotive and developmentally risky discretionary activities throughout their adolescent years. Moreover, past research has not examined the implications these combinations of discretionary activities may have for civic engagement in adulthood. Developmentally promotive discretionary activities, such as volunteering or attending religious services, can provide opportunities for healthy growth in areas such as the development of identity and social network relationships (Barber et al., 2001; Flanagan, 2003). Developmentally risky discretionary activities, such as alcohol use, may negatively impact normative cognitive and social development during adolescence (Brown et al., 2008), however, alcohol use may also promote identity development (Dworkin, 2005). By examining combinations of discretionary activities rather than single activities, we may gain essential knowledge about how the synergy of discretionary activities, that is, different combinations that contribute uniquely to development, may set the stage for different levels of adult civic engagement. We hypothesized that adolescents who participated in a wide range of activities would have higher rates of civic engagement in adulthood compared to youth involved in one or no activities because of the various opportunities, skills, and social networks that are potentially available through different discretionary activities.

Identifying combinations of discretionary activities may have implications for prevention. For example, using classes of discretionary activities to predict health outcomes or other outcomes among adolescents could help to identify and target individuals who may be most in need of prevention/intervention efforts. Uninvolved individuals may be at risk for isolation and may lack the opportunities to develop civic skills and social networks which are crucial for

transitioning to adulthood and becoming active members of larger society. Individuals who are involved in several activities may have more opportunities and interactions with diverse networks, but could become involved in risky health behaviors that reduce their ability or interest in engaging with their networks. For highly-involved youth, interventions geared around social norms or describing how their health risk behaviors could impact others may be most effective for reducing heavy drinking because these kinds of programs might appeal to this group's connection to others. By exploring the heterogeneity of youth experiences and how these discretionary activities predicted civic engagement in adulthood, we may gain insight into the constellation of discretionary activities that may be important to adolescent development, particularly for subgroups of adolescents who vary from the general trend (i.e., mean-level associations of the overall sample).

Person- and Variable-Centered Analysis

Development is complex and necessitates examining multiple factors and their interrelations simultaneously (Bergman & Magnusson, 1997; Nunis & Macy, 2008; von Eye & Bogat, 2006). Previous research has documented relationships between civic engagement, free time, and alcohol use activities, but had used a variable-centered approach that described the overall sample and that assumed relationships between variables held across populations. In contrast, a person-centered approach would describe differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). Person-centered analysis classifies individuals into subgroups through their distinct constellations of behaviors, including subgroups that run counter to mean-level associations of the overall sample. The current study explored differences between individuals based on how they combined

discretionary activities and whether these groups exhibited different levels of civic engagement in adulthood.

Limited work has examined discretionary activities from a person-centered perspective, and no study has examined civic engagement, free time, and alcohol use activities together using person-centered analyses. In one study of civic engagement, Canadian 12th graders were divided into four distinct groups based on their community and political involvement, including *uninvolved* (low involvement in all activities), *responders* (passive political activities such as signing a petition), *helpers* (helped in their school or community, but no other political activities), and *activists* (highly involved in all civic and political activities) (Pancer et al., 2007). The uninvolved had lower levels of social support, optimism, and self-esteem compared to the three other profiles of adolescents.

Studies examining U.S. adolescents' volunteer and free time (e.g., sports, school groups, religious groups) activities have identified five to seven distinct groups, including *low-engaged* (no participation in free time activities), *sports-only* (high involvement in sports but no other activities), *school-groups* (high involvement in school activities but low involvement in other activities), and *highly-engaged* (multiple activity participation) (Linver, Roth, & Brooks-Gunn, 2009; Zarrett et al., 2009). More positive youth development (e.g., social well-being, school connectedness) and contribution to families and communities (e.g., leadership, helping) was found among the highly-engaged.

Person-centered analyses investigating motivations for alcohol use among U.S. adolescents who had ever consumed alcohol identified four classes: *experimenters*, *thrill seekers*, *relaxers*, and *multi-reasoners* (e.g., get high, relax) (Coffman, Patrick, Palen, Rhoades, & Ventura, 2007). Alcohol initiation (i.e., the grade when they first tried alcohol more than just a

few sips) and past year drunkenness predicted a greater likelihood of being a multi-reasoner than an experimenter. A study investigating engagement in active, creative, performance, and social leisure activities among South African adolescents in the HealthWise program (Caldwell et al., 2004) found profiles of youth classified as *non-participants*; *active and creative engaged*; *active, creative, and social disengaged*; and *active, creative, and social engaged*. Among girls, two additional profiles of *social disengaged* and *social engaged* were identified and a *mixed engagement* profile was found among boys. The prevalence of alcohol and tobacco use was higher among youth who were classified as members of the *active, creative, and social disengaged* profile as compared to the other profiles (Tibbits, 2009).

Taken together, these studies indicate that the combination of discretionary activities that adolescents engage in may be important to understanding other aspects of their development. Furthermore, potential avenues for prevention/intervention efforts are evident in these results but differ by study. For example, *helpers*, that is those who volunteered but were not political active (Pancer et al., 2007), may be less motivated to be politically involved and may benefit from programs geared towards political education and engagement. *Thrill seekers*, those who drank for excitement (Coffman et al., 2007), may be better off directed towards exhilarating activities that do not have the same potential for negative health outcomes as alcohol use (e.g., athletic races or other competitive activities). These reviewed studies provided evidence to guide hypotheses in the current study which extended previous work by combining civic engagement, free time, and alcohol use discretionary activities in person-centered analyses. Furthermore, the current study contributed to the literature by exploring differences across historical time and by predicting civic engagement in adulthood from combinations of discretionary activities.

The Proposed Studies

Aims 1 and 2

Study 1 used nationally representative data of U.S. adolescents who participated in the annual Monitoring the Future surveys (Johnston et al., 2009) to: (1) Describe U.S. adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities; and (2) Examine whether and how U.S. adolescents' combinations of discretionary activities differed across four decades. Based on previous research (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009), we hypothesized for the first aim that there would be three combinations of discretionary activities: those who did not participate in any discretionary activities (uninvolved), those who participated in sports (sports-only), and those who participated in all activities (highly-involved). For the second aim, we conducted exploratory analyses examining differences across decades without *a priori* hypotheses. Based on changes in policies concerning girls in sports and in light of the gender differences in civic engagement and alcohol use, all analyses were conducted separately by gender. In all samples, self-report cross-sectional survey data were collected in the spring of the final year of standard compulsory secondary education at modal age 18 (Grade 12). Measures of the discretionary activities included: (a) civic engagement, such as volunteering, donating to a political campaign, and participating in a demonstration; (b) free time, such as socializing and sports; and (c) alcohol use, which included annual alcohol use and heavy drinking in the prior two weeks. Person-centered latent class analysis was utilized to describe combinations of discretionary activities.

Aims 3 and 4

Study 2 used nationally representative data of British adolescents participating in the longitudinal British Cohort Study (Butler et al., 1985) to: (3) Describe British adolescents' combinations of civic engagement, free time, and alcohol use discretionary activities and

examine whether these combinations replicated those found in the U.S. samples; and (4) Investigate whether British adolescents' combinations of discretionary activities predicted differences in civic engagement in adulthood at ages 26, 30, and 34. For the third aim, we hypothesized that the same three combinations –uninvolved, sports-only, and highly-involved – would be found in the British sample. All analyses were performed separately by gender due to gender differences established in previous studies. For the fourth aim, we hypothesized that highly-involved adolescents would have higher rates of civic engagement in adulthood compared to uninvolved and sports-only youth due to more positive outcomes found among more highly involved adolescents (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009). Self-report adolescent survey data were collected in the final year of standard compulsory secondary education in Britain at age 16. Measures of the discretionary activities from adolescence included: (a) civic engagement, such as volunteering, and political club membership; (b) free time, such as socializing and sports; and (c) alcohol use, which included annual alcohol use and heavy drinking in the prior two weeks. Adult self-report survey data were collected at ages 26, 30, and 34, and included civic engagement measures such as political interest, voting, union membership, and civic action (e.g., signed a petition, attended a public meeting or rally). Person-centered latent class analysis was utilized to describe combinations of discretionary activities. Logistic regression analysis was used to predict adult civic engagement based on the identified combinations.

Implications for Adolescent Development

Both sets of aims may have implications for understanding adolescent development. Experiences at different points in the lifespan may influence development, both immediately and in later stages (Baltes, 1987). Confirmation of the hypothesized groups in the U.S. and British

samples would indicate that there is heterogeneity in the way adolescents combine activities. Cross-national comparisons may suggest that youth in the two countries had different opportunities for involvement in discretionary activities or that they selected, valued, or enjoyed different activities. Results from the longitudinal analyses may also prove important. If highly-involved youth are found to be more civically engaged in adulthood, these findings would be consistent with an underlying process by which these youth could have had more opportunities to make friends or develop relationships with adult role models that would connect them with organizations and with society. If, contrary to our hypotheses, we find that the sports-only group is also more civically engaged in adulthood, these results might suggest that these adolescents developed social networks through their sports teams that carried into adulthood. The importance of examining other outcomes such as health- or work-related measures and of scrutinizing potential mechanisms (e.g., carrying skills learned in one activity into another activity) of how combinations of discretionary activities could contribute to adolescent development may be potential avenues of future research. Establishing that adolescents combined activities in various ways and that these combinations were linked with civic engagement in adulthood represents an important first step to uncovering configurations of experiences that predict adult civic engagement and connection with society.

CHAPTER 2: U.S. ADOLESCENTS' DISCRETIONARY ACTIVITIES ACROSS TIME: COMBINATIONS OF CIVIC ENGAGEMENT, FREE TIME, AND ALCOHOL USE

Discretionary activities provide opportunities for growth and development rarely found elsewhere in youth's lives (Larson, 2001), in part because youth have a voice in these matters. In the United States, adolescents may be involved in a variety of discretionary activities, defined here as activities that are not necessarily school- or work-related, including extracurricular clubs, socializing, sports, and religion (U.S. Bureau of Labor Statistics, 2007). These experiences may influence development, both immediately and at later points in the lifespan (Baltes, 1987), and this may be particularly true during adolescence insofar as this is both an exploratory and a formative time. As adolescents engage in identity exploration and make school-, work-, and relationship-related choices, these decisions have implications contemporaneously as well as for their future. For example, involvement in civic engagement, sports, or alcohol use in adolescence has been linked with concurrent and adult positive and negative outcomes, such as identity exploration and development, self-esteem, civic participation, educational attainment, alcohol-related injuries, and suicide attempts (Albanesi et al., 2007; Barber et al., 2001; Brown et al., 2008; Cicognani et al., 2008; Dworkin, 2005; Eccles et al., 2003; Finlay & Flanagan, 2009; Fredricks & Eccles, 2006; Otto, 1976; Pancer et al., 2007; Wilson & Musick, 2003).

The discretionary activities adolescents are interested in as well as their opportunities for participation are likely to vary according to historical conditions and the policies of an era that shape opportunities. For example, prevalence rates of girls' involvement in sports has increased since the introduction of Title IX (Stevenson, 2007). The ways in which adolescents combine discretionary activities may also have implications for later outcomes through exposure to different social networks and opportunities to gain and practice a variety of skills. In the present

study, we aimed to explore whether youth differed in their combinations of discretionary activities across four consecutive decades.

Twelve cohorts of 12th grade adolescents across four decades, assessed in 1976-1978, 1986-1988, 1996-1998, and 2006-2008, were examined to determine whether and how combinations of civic engagement, free time, and alcohol use discretionary activities differed across historical time. *Civic engagement* captured activities that expressed a commitment to society and the well-being of others, including volunteering and civic behaviors (e.g., demonstrating, working on a political campaign). *Free time* included activities that were part of adolescents' daily family and school lives but that did not contain an inherent commitment to society. For the purposes of this study, free time activities included hobbies, socializing, sports, and religious services. *Alcohol use* represented experimentation with potential risks to health and included two measures: annual alcohol use and heavy drinking in the prior two weeks.

As development is complex, research that examines multiple factors and interrelationships simultaneously is needed (Bergman & Magnusson, 1997; Nunis & Macy, 2008; von Eye & Bogat, 2006). Previous work examining activity involvement tended to focus on variable-centered analysis that described the overall sample through examining the associations among variables of interest. Person-centered approaches describe differences between subgroups of people, based on individual characteristics (i.e., variables of interest), within a population (Bergman & Magnusson, 1997; Collins & Lanza, 2010; Nunis & Macy, 2008; von Eye & Bogat, 2006). In the current study, person-centered analyses were used, rather than measuring outcomes based on the number of activities an adolescent was involved in, to identify combinations of discretionary activities with the goal of describing the constellation of experiences that distinguished groups of adolescents. Differences across decades in

configurations of adolescent discretionary activities were documented. The current study extended previous variable-centered analyses by examining patterns of a variety of discretionary activities rather than focusing on relationships between two activities or exploring activities within one specific activity type.

Discretionary Activities From a Variable-Centered Approach

Research examining civic engagement, free time, and alcohol use activities has been primarily variable-centered and no study has examined all three types of activities together using a person-centered approach. Civic engagement has been linked with lower rates of alcohol use among adolescent girls and boys in several studies (Barber et al., 2001; Chassin, Pitts, & DeLucia, 1999; Michelsen, Zaff, & Hair, 2002), but a longitudinal study indicated that boys who increased their volunteer service were more likely to become regular drinkers (Vicary, Smith, Caldwell, & Swisher, 1998). In another longitudinal study, sports participation was associated with increased rates of wanting to contribute to one's community and society as well as increased social responsibility (e.g., attitudes, competence, and efficacy) (Brunelle, Danish, & Forneris, 2007; Zarrett et al., 2009). However, another study found no association between sports and civic engagement (Kahne & Sporte, 2008). Other research has found a positive association between sports and alcohol use (e.g., a higher frequency of drinking and getting drunk) (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003; Fredricks & Eccles, 2005; Wichstrom & Wichstrom, 2009). Although there is evidence that pairs of the three types of discretionary activities are related, the current study extended prior work by utilizing a person-centered approach to examine how adolescents combined a variety of civic engagement, free time, and alcohol use discretionary activities across historical time.

Discretionary Activities from a Person-Centered Approach

Development is complex and necessitates examining multiple factors and their interrelations simultaneously (Bergman & Magnusson, 1997; Nunis & Macy, 2008; von Eye & Bogat, 2006). Previous research has documented relationships between civic engagement, free time, and alcohol use activities, but had used a variable-centered approach that described the overall sample and that assumed relationships between variables held across populations. In contrast, a person-centered approach describes differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). Person-centered analysis classifies individuals into subgroups through their distinct constellations of behaviors, including subgroups that run counter to mean-level associations of the overall sample.

Person-centered approaches have been used in some studies but typically within a type of activity. A study examining community and political involvement among 12th graders in Canada found four distinct groups of adolescents (Pancer et al., 2007). *Activists* comprised 8% of the sample and were highly involved in all political and community activities. *Helpers*, 26% of youth, focused their energy on helping others in their school or community, but were not involved in political work. *Responders* were the largest group with 34% of the sample and were involved in passive political activities when asked by others (e.g., signing a petition), but were otherwise unengaged. The *uninvolved*, which comprised 31% of the sample, showed low participation in all types of civic activities. Activists, helpers, and responders had significantly higher levels of social support, optimism, and self-esteem as compared to the uninvolved.

Free time activities have also been explored using person-centered analyses. A study examining U.S. adolescents' volunteering and free time activities (e.g., sports, school-clubs, religion, volunteering) described seven distinct groups, including the *highly-engaged* who spent time in multiple activities, *sports-only* participants, *sports-performing arts* participants, *sports-*

religious services participants, and the *low-engaged* who reported little participation in any activity (Zarrett et al., 2009). Another study of volunteering and free time activities (e.g., sports, school, religious, community groups) identified five groups of adolescents including *sports-plus* (high involvement in all activities), *sports* (high participation in sports and lower participation in all other activities), *school-groups* (high participation in school activities and low participation in all other activities), *religious-groups* (high participation in religious groups and low participation in all other activities), and *low-involved* (low participation across all activities) (Linver et al., 2009). Adolescents in the more highly involved groups (e.g., sports-plus, sports-religious services) in both studies had higher positive youth development (e.g., social well-being, school connectedness) and contribution to communities (e.g., leadership, helping) than *low-involved* youth. Notably, both of these studies included volunteer work along with other free time activities, but did not include other civic activities nor did they assess involvement in any risky behaviors.

Person-centered analyses have been used to investigate adolescents' motivations for alcohol use or engagement in leisure activities. U.S. 12th grade adolescents who had ever consumed alcohol were classified based on the reasons they gave for drinking. Four classes emerged including *experimenters*, *thrill seekers*, *relaxers*, and *multi-reasoners* (e.g., drink to have a good time, get away from problems, relax) (Coffman et al., 2007). An early grade of alcohol initiation (i.e., first trying more than a few sips of alcohol) and past year drunkenness predicted a greater likelihood of being a multi-reasoner than an experimenter. A study investigating engagement in active, creative, performance, and social leisure activities among South African adolescents in the HealthWise program (Caldwell et al., 2004) found five profiles of youth classified as *non-participants*; *active and creative engaged*; *active, creative, and social*

disengaged; and *active, creative, and social engaged*. Among girls, two additional profiles of *social disengaged* and *social engaged* were identified and a *mixed engagement* profile was found among boys. Alcohol and tobacco use was higher among youth who were in the *active, creative, and social disengaged* profile as compared to the other profiles (Tibbits, 2009).

As these studies indicated, adolescents combined activities or motivations for behaviors in different ways. There were typically adolescents who: (a) reported no involvement in any discretionary activities, (b) reported involvement in sports, and (c) reported involvement in many different activities. Based on these studies, it was hypothesized that there would be uninvolved, sports-only, and highly-involved youth.

Historical Changes in Discretionary Activities

Adolescents' decisions to participate in discretionary activities, as well as the activities they combine, may be partially due to the availability, popularity, or obligatory statuses of various activities. Trends in participation rates of particular activities point to the importance of examining historical changes in adolescents' discretionary activities. For example, volunteering rates among 12th graders were steady during the late 1970s and through the 1980s, but increased in the 1990s through the 2000s (Lopez et al., 2006). This increase has been partially attributed to increased volunteer service requirements for high school graduation and the importance of volunteer service for college applications (Andolina, Jenkins, Ketter, & Zukin, 2002; Marcelo, 2007). Likewise, historical changes in gender roles and a policy change in athletic opportunities in the U.S., Title IX, resulted in dramatic increases in girls' participation in sports, though girls still lag behind boys in their participation rates (Stevenson, 2007). Historical trend data indicate that alcohol prevalence and heavy drinking among high school 12th graders declined from the

late 1970s through the early 1990s, but increased in prevalence in the late 1990s before starting to decline in the mid-2000s (Johnston et al., 2009).

Gender Differences in Discretionary Activities

As noted, historical changes have resulted in some leveling of gender differences in participation in discretionary activities. Nonetheless, gender differences remain. Volunteering is higher among adolescent girls than boys (Davila & Mora, 2007; Lopez et al., 2006). In contrast, sports involvement has increased among adolescent girls, but adolescent boys remain more likely to participate in athletic activities (Caspersen, Pereira, & Curran, 2000; Slater & Tiggemann, 2010). Annual prevalence of alcohol use and heavy drinking are also higher among 12th grade adolescent boys than girls (Johnston et al., 2009). These differences suggest that the motivations or opportunities for some activities vary by gender. Thus, all analyses were conducted separately by gender.

The Current Study

Two aspects of lifespan development were addressed: (a) multidimensionality, and (b) historical embeddedness (Baltes, 1987; Baltes et al., 1977; Lerner & Castellino, 2002). The multidimensionality of adolescents' experiences was investigated in the first aim through examining combinations of civic engagement, free time, and alcohol use discretionary activities. Historical embeddedness was examined in the second aim through the use of samples from four decades. Combinations of adolescent discretionary activities in each decade were documented to determine whether adolescents combined activities the same way across time.

Hypotheses

Based on previous research (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009), we hypothesized in the first aim that there would be three combinations of discretionary

activities: those who did not participate in any discretionary activities (uninvolved), those who participated exclusively in sports (sports-only), and those who participated in all activities (highly-involved). For the second aim, we conducted exploratory analyses without *a priori* hypotheses. Based on changes in policies concerning girls' access to sports in schools and in light of the gender differences in civic engagement and alcohol use, analyses were conducted separately by gender.

Method

Monitoring The Future (MTF) is a nationally representative annual survey of U.S. high school students which has the primary aim of charting historical and developmental trends in substance use (Johnston et al., 2009). MTF began in 1975 and annually samples approximately 16,000 students from 120 to 140 public and private schools in the U.S. to collect a nationally representative sample of 12th grade students (<http://www.monitoringthefuture.org/purpose.html>, 2009). Surveys are conducted in school settings, in classrooms, or in larger group administrations depending on the requirements of the school. Parents are mailed passive consent forms and students provide assent prior to data collection. Data collection for the Monitoring the Future surveys is approved by the University of Michigan Institutional Review Board and the current analyses were approved by the Pennsylvania State University Institutional Review Board. All data were accessed through and downloaded from the publicly available Inter-University Consortium for Political and Social Research data archive (<http://www.icpsr.umich.edu/cocoon/SAMHDA/SERIES/00035.xml>, 2009).

Participants

Participants for the present analyses were from 12 cohorts of 12th grade adolescents from 1976-1978, 1986-1988, 1996-1998, and 2006-2008 who answered Form 2 of the MTF survey

which included questions about civic engagement, free time, and alcohol use discretionary activities. The 1988 cohort was selected because most of the participants were 18 years old during the same year that the British participants (the sample used in Study 2) were 18 years old. In addition, the 1978, 1998, and 2008 cohorts were selected to represent generations from the 1970s, 1990s, and 2000s. To increase the stability of the results, two adjacent cohorts from each decade were selected and combined to represent each decade (e.g., 1976, 1977, and 1978 represented the 1970s).

Participants from the 1970s (1976-1978 cohorts) were 5,302 girls (51%) and 5,047 boys, the majority of whom were age 18 or older (97%). The 496 participants who did not report gender were excluded from analysis. The overall response rate for 1976 was 77%, for 1977 was 79%, and for 1978 was 83% (ICPSR, 1984a, 1984b, 1984c). The majority of participants were White (76%) with the remainder of African American (12%) descent or unknown¹ race/ethnicity (12%). Among mothers of the participants, 19% had completed some high school or less, 40% had graduated from high school, 13% had completed some college, 12% had graduated from college, 5% had an advanced degree, and 14% had unknown/missing education. Among fathers of the participants, 22% had completed some high school or less, 30% had graduated from high school, 14% had completed some college, 13% had graduated from college, 5% had an advanced degree, and 12% had unknown/missing education.

¹ Race/ethnicity information is not included in publically available datasets when the sample sizes are small enough to allow for possible identification of participants. Participants who indicated they were White, African American, or Hispanic (for the 2000s decade) were contrasted with respondents whose race/ethnicity was not available (i.e., who gave other responses to the race/ethnicity questions or who left information about race/ethnicity missing).

The 1980s (1986-1988 cohorts) were comprised of 4,888 girls (51%) and 4,654 boys, the majority of whom were age 18 or older (74%). The 356 participants who did not report gender were excluded. The overall response rates were 83% for 1986 and 1988, and 84% for 1987 (ICPSR, 1988, 1989, 1990). Nearly three-fourths of participants were White (73%) with the remainder of African American (12%) descent or unknown race/ethnicity (16%). Among mothers of the participants, 14% had completed some high school or less, 35% had graduated from high school, 19% had completed some college, 18% had graduated from college, 9% had an advanced degree, and 6% had unknown/missing education. Among fathers of the participants, 15% had completed some high school or less, 27% had graduated from high school, 16% had completed some college, 20% had graduated from college, 14% had an advanced degree, and 8% had unknown/missing education.

The 1990s (1996-1998 cohorts) included 3,833 girls (52%) and 3,526 boys, two-thirds of whom were age 18 or older (69%). The 377 participants who did not report gender were excluded. The overall response rates for 1996 and 1997 were 83%, and for 1998 was 82% (ICPSR, 1998, 2000; Johnston, Bachman, & O'Malley, 2001). The majority of participants were White (62%) with the remainder of African American (15%) descent or unknown race/ethnicity (24%). Among mothers of the participants, 12% had completed some high school or less, 28% had graduated from high school, 19% had completed some college, 22% had graduated from college, 11% had an advanced degree, and 7% had unknown/missing education. Among fathers of the participants, 13% had completed some high school or less, 26% had graduated from high school, 20% had completed some college, 20% had graduated from college, 14% had an advanced degree, and 11% had unknown/missing education.

Participants from the 2000s (2006-2008 cohorts) included 4,037 girls (52%) and 3,768 boys, more than two thirds of whom were age 18 or older (70%). The 466 participants who did not report gender were excluded. The overall response rate was 83% in 2006, 81% in 2007, and 79% in 2008 (ICPSR, 2007, 2008, 2009). Approximately two-thirds of participants were White (65%) with the remainder of African American (11%) or Hispanic (8%) descent, or unknown race/ethnicity (16%). Among mothers of the participants, 10% completed some high school or less, 24% had graduated from high school, 20% had completed some college, 26% had graduated from college, 12% had an advanced degree, and 8% had unknown/missing education. Among fathers of the participants, 13% had completed some high school or less, 25% had graduated from high school, 16% had completed some college, 21% had graduated from college, 13% had an advanced degree, and 11% had unknown/missing education.

Measures

Adolescent civic engagement, free time, and alcohol use activity measures were drawn from the 12th grade survey. When possible, items were selected to be similar to those available in the survey of British adolescents in Study 2. Descriptive statistics of the civic engagement, free time, and alcohol use measures for girls and boys are displayed in Tables 1a and 1b, respectively.

Civic engagement. Two indicators assessed civic engagement. One item measured how often adolescents participated in Volunteer work or community affairs (Lopez et al., 2006). Response options were as follows: 1 = *never*, 2 = *a few times a year*, 3 = *once or twice a month*, 4 = *at least once a week*, and 5 = *almost everyday*. Responses were coded into 1 = *no volunteer service* (1) and 2 = *yes, volunteer service* (2 through 5). Six items assessed Civic behaviors by asking students whether they had done the following: (a) Voted in a public election, (b) Written to public officials, (c) Given money to a political candidate or cause, (d) Worked on a political

campaign, (e) Participated in a lawful demonstration, and (f) Boycotted certain products or stores. Response options were 1 = *I probably won't do this*, 2 = *don't know*, 3 = *I probably will do this*, and 4 = *I have already done this*. Voting was excluded from the civic behaviors scale as many adolescents were not yet eligible to vote or may not have been eligible at the most recent election. Civic behaviors included individuals who answered 4 to any of the remaining items and the scale was coded as 1 = *no civic participation* (1 through 3) and 2 = *yes, civic participation* (4). As opportunities for civic engagement were not necessarily available on a daily basis, response options for volunteering and civic behaviors were coded to capture individuals who reported any participation in these activities. As evidence of predictive validity, volunteer work was not positively associated with deviant behavior (e.g., criminal activities, heavy drinking) (Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996).

Free time. Frequency of involvement in seven free time activities (Bachman et al., 2002) was measured with the following response options: 1 = *never*, 2 = *a few times a year*, 3 = *once or twice a month*, 4 = *at least once a week*, and 5 = *Almost everyday*. Following procedures from previous research, we aggregated activities into categories based on the activity's content (Eccles & Barber, 1999). When an individual reported participating in more than one activity in a given category, the highest reported frequency value was utilized. Hobbies/crafts (Play a musical instrument/sing; Do creative writing; Do art or craft work; Work around the house, yard, garden, car, etc.), Socializing (Get together with friends, informally; Go to a shopping mall) and Sports (Actively participate in sports, athletics, or exercising) were coded as 1 = *low participation* (1 through 4) and 2 = *high participation* (5). Free time activities may have been available on a daily basis, thus the cut-off was chosen to differentiate between youth who were sporadically engaged or less committed to these activities versus adolescents who were highly committed to these

activities. Socializing has been linked with high rates of deviant behaviors (e.g., criminal behavior, heavy alcohol use) whereas sports activities were not positively associated with deviant behaviors (Osgood et al., 1996). Attendance at Religious services was measured by one item with these response options: 1 = *occasionally*, 2 = *once or twice a month*, 3 = *once a week*, and 4 = *more than once a week*. Responses were coded into 1 = *low attendance* (1 or 2) and 2 = *high attendance* (3 or 4) to differentiate between youth who may have attended only during the holidays or special occasions versus those who were regularly committed to religious activities. The predictive validity of religiosity, including attendance at religious services, as a protective factor against substance use has been investigated (Wallace et al., 2007).

Alcohol use. Annual alcohol use, more specifically, the prevalence of alcohol use in the past year, was assessed with one question that asked whether an adolescent had ever consumed alcohol in the past 12 months (Johnston et al., 2009). Response options were 1 = *0 occasions*, 2 = *1-2 occasions*, 3 = *3-5 occasions*, 4 = *6-9 occasions*, 5 = *10-19 occasions*, 6 = *20-39 occasions*, and 7 = *40 or more occasions*. Response options were coded as 1 = *no drinking/1-2 occasions* (1 or 2) and 2 = *yes, drank 3-5 occasions or more* (3 through 7) to distinguish between adolescents who may have consumed alcohol at special family events versus adolescents who drank more regularly with their friends during their discretionary time. Heavy drinking was assessed by one question asking the adolescent the number of occasions s/he had consumed 5 or more drinks in a row in the prior two weeks (Johnston et al., 2009). Response options were 1 = *none*, 2 = *once*, 3 = *twice*, 4 = *three to five times*, 5 = *six to nine times*, and 6 = *ten or more times*. Responses were coded as 1 = *no heavy drinking* (1) and 2 = *yes, heavy drinking* (2 through 6). The alcohol use activity variables were selected to capture youth who may have consumed alcohol on occasion over the course of a year as well as individuals who drank alcohol heavily. In prior studies,

alcohol use and heavy drinking have been linked to alcohol control policies, reasons for drinking such as getting high or boredom, and part-time work (Bachman, Safron, Sy, & Schulenberg, 2003; Carpenter, Kloska, O'Malley, & Johnston, 2007; Patrick & Schulenberg, 2011).

Plan of Analysis

Gender differences in activities. In a preliminary step we examined whether girls and boys differed on mean levels of all discretionary activity measures due to differences in volunteering, sports, and alcohol use found in previous research (Caspersen et al., 2000; Johnston et al., 2009; Lopez et al., 2006). Girls and boys were significantly different on all activities across decades except for civic behaviors and socializing (t values ranged from 11.63 to 32.50, $p < .001$). Thus, in all subsequent analyses, each gender was examined separately.

Model specification. To examine adolescent patterns of involvement in discretionary activities we used Latent Class Analysis (LCA), a technique that describes differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). In brief, LCA is a person-centered approach that classifies individuals into subgroups through their distinct constellations of behaviors. Using various categorical data variables a smaller number of basic groups are identified and individuals are assigned to their most likely latent class. LCA has been used in previous studies to identify adolescents' different motivations for drinking, to investigate violence exposure among women, and to classify adolescents by their level of alcohol use disorders (Chung & Martin, 2001; Coffman et al., 2007; Nurius & Macy, 2008).

LCA models with two, three, four, five, and six latent classes were compared to identify the best fitting model using 100 random starting values for each model. In total, eight separate sets of models were tested because LCA models were tested separately by gender and decade.

Model selection. The best fitting model for each gender and decade was determined through examination of a variety of fit statistics and judgments about the parsimony (a smaller number of classes), interpretability (the item-response probabilities clearly distinguished one group from another), and stability. Better fits were indicated by lower likelihood-ratio G^2 statistic, Akaike's information criterion (AIC, Akaike, 1974), and Bayesian information criterion (BIC, Schwarz, 1978). When these indicators were contraindicated, the model with the smallest BIC value was selected. Models were also selected based on stability which is tested separately for each number of classes. Stability is defined here as the number of models that converged on the exact same solution (e.g., the G^2 statistics, AIC, and BIC) using 100 random starting values. Models equal to or closest to 100% convergence were considered more stable with at least two-thirds of the models converging. Models were estimated using SAS PROC LCA. Missing data on latent class indicators was accommodated through the full information maximum likelihood estimations using the EM algorithm as implemented in PROC LCA (Lanza, Lemmon, Schafer, & Collins, 2008).

Model interpretation. Two sets of parameters were estimated and used to describe the profiles of discretionary activities identified: class membership probabilities and item-response probabilities (Collins & Lanza, 2010). *Class membership probability* is the probability that an individual is a member of a specific discrete class with a higher likelihood indicating that an individual is more likely to be in that class. Individuals were classified into the group in which they had the highest probability of being a member. *Item-response probability* is the probability of endorsing a specific item taking class membership into account. Item-response probabilities range from 0 to 1, with higher than .5 representing a greater likelihood and lower than .5 representing a lower likelihood of responding affirmatively to the item. Contrasts between the

groups based on their item-response probabilities (e.g., did one group have a strongly likelihood of reporting a specific activity versus another group that was unlikely to report that activity) were used to name the groups.

Model selection across decades. Next, to examine whether the classes differed across decade, the four decades were combined for each gender and two multi-group LCAs were conducted, one for girls and one for boys, to determine whether the four decades differed in their latent class membership and item-response probabilities. Measurement invariance was tested by running two additional models to determine whether individuals from different decades had the same probability of providing the same latent classes (Collins & Lanza, 2010). In the first model, the grouping variable of decade was free to vary across time and, in the second model, decade was constrained. The differences between the models in the G^2 statistic and degrees of freedom were evaluated against the chi-squared distribution to determine whether the differences between decades were statistically significant for each gender.

Results

Model Selection: Girls

As described in the Method section, separate LCA tests were conducted for girls within each decade. The fit of the model for each of the four decades is reported in Table 2a. The four-class model, shown in bold, was selected as the best fitting model for each decade because it had the smallest BIC value and was more parsimonious than the five-class model. Incremental decreases in the AIC and BIC up to the four-class model suggested improvement in fit, whereas the BIC increased between the four- and five-class solutions. In addition, when stability was tested with 100 random starting values, most of the four-class models converged on the same solution (90% for the 1970s, 94% for the 1980s, 92% for the 1990s, and 100% for the 2000s),

whereas most of the five-class models did not (68% for the 1970s, 32% for the 1980s, 30% for the 1990s, and 36% for the 2000s). Moreover, the four-class solution was clearly distinguishable and interpretable for each decade. The fit statistics combined with the interpretability of the solution and the stability across the 100 random starting values provided consistent evidence that the four-class solution represented the best overall fit for all four decades.

The next step in the analyses was to examine the item-response probabilities which indicated that the characteristics of the latent classes were similar across decades. Data for all four decades were combined and a multi-group LCA was conducted. The steps outlined above were repeated and the four-class solution was selected as the best fitting model (four-class: 99% model convergence; five-class: 44% model convergence). Table 2a displays the fit statistics for the tested models. The G^2 test of measurement invariance ($\Delta G^2 = 1326, \Delta df = 759, p < .05$) was significant, indicating that there were differences across decades. However, inspection of the item-response probabilities showed that the characteristics of the classes were the same as when the decades were analyzed separately and suggested that the item-response probabilities could be constrained across the decades without decrement to the model fit. An additional benefit of this decision was that the prevalence of latent classes could be compared across decades.

Model Selection: Boys

The LCA model selection for boys was conducted the same way as for girls. The fit of each model for each decade is reported in Table 2b. In contrast to the girls, a three-class model represented the best fit for the 1970s decade whereas a four-class model represented the best fit for the remaining three decades. Stability tests for the 1970s showed 74% model convergence for the three-class model and only 52% convergence for the four-class model. Stability tests for the remaining decades indicated that the four-class model was more stable (66% for the 1980s, 74%

for 1990s, and 70% for the 2000s) than the five-class model (53% for the 1980s, 43% for the 1990s, and 42% for the 2000s).

Due to the differences in the latent classes between the 1970s and the remaining decades, the 1970s were considered separately from the other three decades and not included in the next step of analyses. Using the same analyses described above, results indicated that a four-class solution represented the best fit across decades (four-class solution: 70% model convergence; five-class solution: 44% model convergence). Table 2b displays the fit statistics for the tested models. Furthermore, the G^2 test of measurement invariance ($\Delta G^2 = 538$, $\Delta df = 506$, *ns*) was not significant, indicating that there were no differences across decades.

Prevalence of Latent Classes and Item-Response Probabilities: Girls

The estimated prevalence of membership in each of the four classes of girls for each decade is provided in the first four rows of Table 3a. The prevalence for each class varied depending on the decade. Names for each latent class were selected based on the classes identified by the combined decades analyses. The first class was named the *low-involved* and the estimated prevalence ranged from 18% to 23%. The second class, the *noncivic drinkers*, ranged from 15% to 25% in estimated prevalence. The third class ranged from 22% to 37% in estimated prevalence and was called the *civic abstainers*. The fourth class was called the *civic drinkers* and its estimated prevalence ranged from 27% to 39%. The affirmative item-response probabilities; that is, the proportion of girls in each class who indicated endorsement of each activity, for each class for the combined decades and for each individual decade are displayed in Table 3a. Figure 1a displays the item response probabilities for the combined decades of girls to provide an alternate way of viewing the latent classes. In addition, we reported the average class

membership probability, which was the average likelihood of being in a certain class for all members of that class.

Low-involved class. The low-involved class showed somewhat similar estimated prevalence rates across decades; 18% in the 1970s, 23% in the 1980s, 18% in the 1990s, and 20% in the 2000s. The average class membership probability for all participants assigned to the low-involved class was .70 ($SD = .16$), ranging from .29 to .97. Overall, girls in this class were relatively uninvolved in discretionary activities compared to the other three classes.

Approximately half of the girls did hobbies, but this was lower than the civic abstainers and civic drinkers classes and similar to the noncivic drinkers class. Less than half participated in volunteering, religious services, and annual alcohol use. These rates were lower than the other three classes, with the exception of religious services for the noncivic drinkers. Less than a third of girls in this class socialized or played sports and they were very unlikely to endorse civic behaviors or heavy drinking.

Noncivic drinkers class. The noncivic drinkers class differed in estimated prevalence depending on the decade. In the 1970s and 2000s, they comprised 20% of those cohorts, whereas their estimated prevalence in the 1980s was 25% and only 15% in the 1990s. The average class membership probability for all participants assigned to the noncivic drinkers class was .73 ($SD = .19$), ranging from .32 to .99. Across the decades, adolescents in this class stood out from their peers with near universal endorsement of annual alcohol use and two-thirds engaging in heavy drinking. The proportion of girls in the civic drinkers class who engaged in heavy drinking was half that of the noncivic drinkers. Two-thirds of the noncivic drinkers reported socializing, which was the highest rate among all four classes. Half of the girls in this class volunteered or did hobbies, which was similar to the low-involved class. Girls in the noncivic drinkers class showed

the lowest rate of religious services (.30) of all the classes. A quarter of girls in this class participated in sports and they were unlikely to endorse civic behaviors, similar to the low-involved.

Civic abstainers class. The class of civic abstainers had a 22% estimated prevalence rate in the 1970s and 1980s, 37% in the 1990s, and 32% in the 2000s. The average class membership probability for all participants assigned to the civic abstainers class was .82 ($SD = .14$), ranging from .33 to .98. This class was distinguished from the low-involved and noncivic drinkers by their almost universal involvement in volunteering and very common (three-quarters) involvement in hobbies and religious activities. In contrast to the civic drinkers class, girls who were civic abstainers were very unlikely to engage in annual alcohol use or heavy drinking. One-quarter of the civic abstainers reported involvement in civic behaviors, which was higher than both the low-involved and noncivic drinkers but lower than the civic drinkers. About one-third of girls in this class reported socializing or playing sports, similar to the low-involved class.

Civic drinkers class. The proportion of girls classified as civic drinkers was larger in 1970s than the following three decades. The prevalence in the 1970s was 39%, in the 1980s was 31%, in the 1990s was 30%, and in the 2000s was 27%. The average class membership probability for all participants assigned to the civic drinkers class was .70 ($SD = .15$), ranging from .29 to .97. Girls who were civic drinkers had the highest likelihoods of endorsing volunteering (.94), civic behaviors (.34), and sports (.46). Two-thirds endorsed hobbies and religious services, which was close to that of the civic abstainers. Almost all girls in this class reported annual alcohol use which was similar to the noncivic drinkers class, though only two-fifths endorsed heavy drinking compared to three-quarters of the noncivic drinkers. Socializing rates were also similar to the noncivic drinkers with just over half endorsing this behavior.

Prevalence of Latent Classes and Item-Response Probabilities: Boys

1970s. The prevalence of membership in each of the three classes of boys from the 1970s is shown in the first row of Table 3b. The estimated prevalence rate for the first class, the *noncivic drinkers*, was 36%. The average class membership probability for all participants assigned to the noncivic drinkers class was .80 ($SD = .17$), with a range of .36 to .99. For the second class, the *civic abstainers*, their estimated prevalence rate was 31%. The average class membership probability for all participants assigned to the civic abstainers class was .83 ($SD = .21$), with a range of .37 to 1.00. The third class, *the civic drinkers*, had an estimated prevalence of 33%. The average class membership probability for all participants assigned to the civic drinkers class was .69 ($SD = .16$), with a range of .34 to .95. The affirmative item-response probabilities for boys from the 1970s, that is, the proportion of boys in each class who indicated involvement in each activity, are shown in Table 3b and plotted in Figure 1b.

The noncivic drinkers class was distinguished from the other two classes by low endorsement of all activities except annual alcohol use (1.00), heavy drinking (.79), and socializing (.64). Their high rates of alcohol use and socializing were similar to the civic drinkers. One-third of this class volunteered compared to two-thirds of the civic abstainers and most of the civic drinkers. The noncivic drinkers engaged in civic behaviors (.18) and religious services (.29) at rates of half those of the civic drinkers, and two-fifths participated in hobbies and sports.

In contrast to the noncivic drinkers, the civic abstainers showed lower rates of socializing with endorsement by less than half of the adolescents. Most boys in this class were unlikely to report heavy drinking and only one-third endorsed annual alcohol use. Two-thirds of boys in this class volunteered and attended religious services and more than half were involved in hobbies

and sports. The civic abstainers were similar to the civic drinkers in most activities, but were distinguished by their low endorsement of the alcohol use activities.

The third class of civic drinkers reported moderate to high endorsement of all activities. They were highly likely to be involved in volunteering (.93), annual alcohol use (.99), and heavy drinking (.72). About two-thirds of all boys in this class participated in hobbies, socializing, sports, and religious services. Although less than half engaged in civic behaviors (.40), their likelihood was twice as high as the two other classes of boys.

Combined decades. The estimated prevalence of membership in each class for boys for the combined decades and for each individual decade is provided in Table 3b. The first class, the *low-involved*, ranged from 10% to 12%; the second class, the *noncivic drinkers*, ranged from 24% to 35%; the third class, the *civic abstainers*, ranged from 25% to 37%; and the fourth class, the *civic drinkers*, ranged from 26 to 30%. The affirmative item-response probabilities; that is, the proportion of boys in each class who indicated involvement in each activity, for the combined decades and for each individual decade are displayed in Table 3b. Figure 1c plots the item-response probabilities for the combined decades as an alternative way of viewing the latent classes.

Low-involved class. The estimated prevalence of the low-involved class was the smallest at each decade; 10% in the 1980s, 11% in the 1990s, and 12% in the 2000s. The average class membership probability for all participants assigned to the low-involved class was .67 ($SD = .17$), ranging from .31 to .93. This class of boys had the lowest likelihood of endorsing any of the activities, except for annual alcohol use, as compared to the other three classes. One-third of low-involved boys endorsed hobbies, sports, and annual alcohol use, and only a quarter volunteered,

socialized, or attended religious services. Boys from this class were very unlikely to engage in civic behaviors or heavy drinking.

Noncivic drinkers class. The noncivic drinkers class comprised an estimated 35% of the sample in the 1980s, 24% in the 1990s, and 25% in the 2000s. The average class membership probability for all participants assigned to the noncivic drinkers class was .89 ($SD = .17$), ranging from .36 to 1.00. Noncivic drinkers were characterized by having a high likelihood of annual alcohol use (.99) and heavy drinking (.79) and a moderate likelihood of socializing (.64). They were similar to the civic drinkers in these activities, but had lower rates for all other activities. One-quarter of the noncivic drinkers endorsed volunteering and religious services, which was similar to the low-involved. Their likelihood of participating in civic behaviors (.15) was double that of the low-involved, but still lower than both the civic abstainers and civic drinkers. Almost half of the noncivic drinkers reported engaging in hobbies and sports, but these rates were lower than the civic abstainers and civic drinkers.

Civic abstainers class. The civic abstainers class of boys had an estimated prevalence rate of 25% in the 1980s, 36% in the 1990s, and 37% in the 2000s. The average class membership probability for all participants assigned to the civic abstainers class was .81 ($SD = .19$), ranging from .34 to .99. Boys in this class strongly endorsed volunteering (.86) and moderately endorsed hobbies (.60), sports (.58), and religious services (.64), similar to the civic drinkers, but were distinguished from the civic drinkers because they were unlikely to endorse annual alcohol use or heavy drinking. Two-fifths of the boys in this class participated in socializing which was lower than the noncivic drinkers or civic drinkers.

Civic drinkers class. The civic drinkers class of boys showed similar rates of estimated prevalence over the decades; 30% in the 1980s, 28% in the 1990s, and 26% in the 2000s. The

average class membership probability for all participants assigned to the civic drinkers class was .71 ($SD = .15$), ranging from .27 to .96. Boys in the civic drinkers class were characterized by moderate to high involvement in all activities. They reported universal endorsement of volunteering (1.00) and annual alcohol use (.99), and strong endorsement of heavy drinking (.74). Two-thirds endorsed socializing and sports and half did hobbies or attended religious services. Though the absolute rate of civic behaviors (.29) for the civic drinkers was low, they had the highest likelihood of engaging in this activity compared to the three other classes.

Discussion

Combinations of Adolescent Discretionary Activities

For girls, four classes of discretionary activities were identified across four decades: low-involved, noncivic drinkers, civic abstainers, and civic drinkers. For boys, there were three classes in the 1970s: noncivic drinkers, civic abstainers, and civic drinkers. The remaining decades showed these same three classes plus one additional: low-involved.

The hypothesis that there would be a group of uninvolved youth was confirmed for girls in all decades and for boys in three of four decades, similar to prior studies (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009). It remains possible that individuals in this group were involved in other activities, but prior studies have shown that the adolescents who are uninvolved had the lowest rates of social support, optimism, self-esteem, and positive youth development, suggesting that this group may be at risk for negative health outcomes. Thus, future research should examine correlates and later outcomes associated with a relative lack of involvement in discretionary activities during adolescence.

Contrary to hypothesis, the present analyses did not identify a group of girls or of boys in any of the four decades who participated only in sports. A lack of a sports-only group may have

been due to the restrictive coding of our sports variable; only individuals who participated every day were coded as highly involved in sports. Despite historical policy changes that have resulted in an increase in girls' sports involvement (Stevenson, 2007), many girls may have been active in sports but not every day which would lead us to underidentify sports-only youth. In contrast, approximately half of the boys from this sample were engaged in sports every day, indicating that sports were an important, but not exclusive, component of boys' activity time. Previous studies that identified sports-only groups (Linver et al., 2009; Zarrett et al., 2009), used samples of mean ages 11 and 14, which is significantly younger than our samples who were mostly 18 years old. Perhaps as boys grew older they became interested in a variety of activities, including sports, or they wanted to diversify their activity involvement with a goal to improving their college applications.

The class of noncivic drinkers stood out from the other groups by their high likelihood of participating in heavy drinking. Of the four classes that emerged from the analyses, this group is most likely to be at risk for negative outcomes because alcohol use in adolescence has been linked with adult alcohol abuse and dependence (Grant & Dawson, 1997; Hingson, Heeren, & Edwards, 2008). In addition, this class may lack the protective effects associated with volunteering and attending religious services (Eccles & Barber, 1999). Increasingly the availability and attractiveness of activities that might interest these youth, or perhaps even obligatory activities that are linked with positive outcomes for youth, such as service learning requirements for high school graduation, might have the salutary effects of increasing the social networks and soft skills of this relatively unengaged class.

The hypothesis that there would be a group of highly-involved adolescents was partially supported. In fact, two classes of involved girls and boys emerged, the civic abstainers and the

civic drinkers. These two classes could be considered more well-rounded adolescents as they were involved in multiple activities, although with different levels of alcohol use. The civic abstainers reported (very) low levels of alcohol use, similar to previous studies (Barber et al., 2001; Chassin et al., 1999; Michelsen et al., 2002), and, thus, avoided the potential health risks associated with such activities. In addition, this group may have had more opportunities to develop social networks through their various discretionary activities that could continue to recruit them into civic life compared to the low-involved and noncivic drinkers who were relatively unengaged in comparison. The civic abstainers class is particularly notable for boys as it is the only group that was likely to be involved in any civic engagement or free time activities without alcohol use present. As so many young people reported involvement in volunteering, focusing on the impact this behavior has on other discretionary activities as well as on broader adolescent health and well-being may be one avenue for future research.

The civic drinkers were well-rounded in that they were more likely to be involved in multiple activities. In support of previous research (Vicary et al., 1998), adolescents in this class participated in civic engagement and alcohol use activities and this was true for both girls and boys. Strong endorsement of sport and alcohol use, however, was only apparent in the civic drinkers class of boys, which partially supports prior work (Eccles et al., 2003; Fredricks & Eccles, 2005). Although civic drinkers may derive a variety of benefits from their engagement in multiple activities, they may also be at risk for serious consequences because many youth were likely to be involved in the health risk activity of heavy drinking.

Historical Changes in Discretionary Activities

Volunteering was common in all decades with more than 70% of girls and 60% of boys participating, similar to rates found in prior studies (Lopez et al., 2006). Service has becoming

increasingly mandatory for graduation from high school as well as an integral part of college applications (Andolina et al., 2002; Marcelo, 2007), which may explain the high rates of this activity. Requiring volunteer service as part of high school may help boost adolescents' exposure to diverse social networks, especially networks that do not engage in drinking, and provide opportunities to gain new skills. These kinds of policy changes that require participation in activities that have been linked with positive outcomes may be especially beneficial for groups such as the low-involved and noncivic drinkers who were relatively unengaged in the activities measured in this study. Similar to prior work (Lopez et al., 2006), among both girls and boys, none of the classes exhibited strong participation in civic behaviors (e.g., boycotted certain products, participated in a lawful demonstration). Low involvement in civic behaviors may speak to a dearth of opportunities for political and civic participation, apathy among young people, or a reflection that this measure did not accurately capture the ways in which most young people are engaged. Other institutional changes such as requiring students to volunteer at a polling location during elections or in a government office may boost their understanding of the functions of government and lead to increased civic engagement as they transition to adulthood.

Despite the introduction of Title IX, our results contradict previous studies that found girls' rates of sports increasing (Stevenson, 2007), though it is unclear if the results of previous studies are true for 12th graders or only for younger high school students. Increases in sports participation among girls in the spring of their final year of high school were not observed, nor did sports participation distinguish the classes. Possible reasons for this discrepancy include the timing of data collection (spring of 12th grade) as well as the present coding of sports as participating almost every day. Although the free time activities were coded to capture individuals who were highly committed to sports, it may not have been realistic for adolescents

to engage in sports activities every day, especially for classes of youth who were involved in other activities. Utilizing a less restrictive sports participation measure or the duration of sports participation in future research might yield a sports-only group or differently distinguish classes of activity participation.

Noticeable age and race/ethnicity changes in the samples were observed over time. Almost all participants from the 1970s were age 18 or older, whereas only three-quarters of the later decades were this age. Although White youth were the most common race/ethnic group at each wave, African American adolescents comprised more than one-tenth of the samples and 8% of the 2000s samples were Hispanic. Despite these shifts, there were remarkable similarities in the classes across time. Such results suggest that the youth who participated in the surveys might be exhibiting similar inclinations to activity involvement or that the availability of these activities remained the same across decades. Cultural differences in activity participation that may exist among youth of different race/ethnicities were not captured by the activities measured in the present study.

Prevention Implications

Although the current study does not have direct applications to prevention programs, these results have implications for prevention research. For example, heavy drinking is often linked with negative outcomes, but for civic drinkers, alcohol use may be something they engage in as they explore other discretionary activities. For the class of noncivic drinkers, their alcohol use may be more problematic because they were less likely to be involved in other activities and potentially more isolated than their more conventionally prosocially-involved peers. Future studies could use the identified classes to more closely examine health and other outcomes among adolescents and help target individuals who may be most in need of

prevention/intervention efforts. For example, the low-involved may also be at risk for isolation and may lack the opportunities to develop civic skills and social networks that are crucial for transitioning to adulthood and becoming active members of larger society (Hanks & Eckland, 1978; Smith, 1999). Development of these skills and networks could occur in civic engagement settings such as volunteering, but also through relationships developed through other activities such as sports or alcohol use. Closer examination of these groups including their health outcomes and the quality of their social interactions would be a logical next step to these analyses.

Limitations and Future Directions

As with any study there were limitations to the current analyses. First, response rates for the samples ranged from 77% to 84%. Youth who missed school the day surveys were collected were likely to differ from their counterparts in the study. For example, adolescents who missed school are more likely to be involved in alcohol and drug use (Johnston et al., 2009). Whether other combinations of activities would be identified among the nonresponders is unknown. Second, the samples were comprised of high school 12th grades; therefore, any adolescents of the same age who had dropped out of high school were not eligible to participate, potentially biasing our results. Third, although an attempt was made to include diverse discretionary activities, there were many other activities not included that may be important to adolescent development. For example, peer involvement and performing arts activities may play a role in adolescents' lives but were unavailable in the current study. Fourth, the available activities were coded in such a way that may have obscured moderate levels of participation. For example, only youth who did sports every day were coded as high participation, but adolescents who were involved in sports a few days a week were grouped with adolescents who did not play any sports. Future research should delve more deeply into these different levels of participation. Fifth, work and work-like

activities such as school and paid employment were not studied but likely include similar aspects of the studied discretionary activities such as socializing with friends, developing skills, or building social networks that contribute to development. Understanding the skills adolescents learn in various activity and work settings as well as the transference of these skills from one setting to another would add to our understanding of adolescent development (see Zimmer-Gembeck & Mortimer, 2006 for a review). For example, less depressive affect is exhibited among adolescents who believe that their work contributes to the development of their schooling and that their schooling contributes to the development of their work (Mortimer, Harley, & Staff, 2002). Sixth, examination of the class membership probabilities indicates that the patterns of activities of some individuals were not well categorized in the study. Future studies should examine these youth in separate analyses to gain a better understanding of their combinations of discretionary activities. Finally, the motivations behind participating in discretionary activities were not examined. For example, did civic drinkers have more opportunities for alcohol use than civic abstainers or were there motivational differences in whether how much or how often to drink?

Conclusions

The strengths of our study include a focus on diverse discretionary activities that have rarely been examined together and never explored through person-centered analyses and the use of 12 nationally representative samples of 12th grade adolescents across four decades. Examining the civic engagement, free time, and alcohol use discretionary activities from a person-oriented perspective allows for patterns of adolescent activities to be identified and described, especially subgroups of adolescents who vary from the general trend. Four groups of adolescents were found across decades and the similarities over historical time are remarkable given the changes

in policies, age, race/ethnicity, and response rates observed. The low-involved and civic drinkers represent classes similar to those found in other students, but results also identified youth from noncivic drinkers and civic abstainers classes. Study 2 will expand on these analyses by investigating their generalizability to adolescents in a British sample, and by testing the long-term civic implications of adolescent combinations of discretionary activities.

Table 1a. *Descriptive Statistics of Civic Engagement, Free Time, and Alcohol Use Activities for U.S. 12th Grade Girls*

Latent Indicator	Code	Label	1970s Freq. (Valid %)	1980s Freq. (Valid %)	1990s Freq. (Valid %)	2000s Freq. (Valid %)
Civic engagement						
Volunteer ^a	1	No	1521 (28.9)	1325 (27.3)	751 (19.6)	910 (22.7)
	2	Yes	3746 (71.1)	3532 (72.7)	3073 (80.4)	3108 (77.3)
	.	Missing	35	31	9	19
Civic behaviors ^b	1	No	3900 (75.2)	3989 (82.6)	2853 (75.1)	3174 (79.7)
	2	Yes	1289 (24.8)	839 (17.4)	946 (24.9)	810 (20.3)
	.	Missing	113	60	34	53
Free time						
Hobbies ^c	1	Low	1547 (29.2)	1897 (38.8)	1463 (38.2)	1551 (38.4)
	2	High	3755 (70.8)	2991 (61.2)	2370 (61.8)	2486 (61.6)
	.	Missing	2	2	0	3
Socializing ^c	1	Low	2673 (50.4)	2572 (52.6)	2100 (54.8)	2307 (57.2)
	2	High	2629 (49.6)	2316 (47.4)	1733 (45.2)	1730 (42.9)
	.	Missing	2	5	1	16
Sports ^c	1	Low	3356 (63.3)	3283 (67.2)	2575 (67.2)	2664 (66.0)
	2	High	1946 (36.7)	1605 (32.8)	1258 (32.8)	1373 (34.0)
	.	Missing	28	22	12	17
Religious services ^d	1	Low	2032 (38.7)	2200 (45.5)	1560 (46.9)	1690 (48.8)
	2	High	3221 (61.3)	2633 (54.5)	1769 (53.1)	1776 (51.2)
	.	Missing	49	55	504	571
Alcohol use						
Annual alcohol use ^e	1	No	1486 (30.0)	1451 (31.0)	1660 (45.1)	1597 (41.2)
	2	Yes	3472 (70.0)	3224 (69.0)	2019 (54.9)	2279 (58.8)
	.	Missing	344	213	154	161
Heavy drinking ^f	1	No	3423 (69.0)	3258 (69.7)	2771 (75.3)	2805 (72.8)
	2	Yes	1536 (31.0)	1416 (30.3)	910 (24.7)	1047 (27.2)
	.	Missing	343	214	152	185

Note. 1970s: $n = 5,302$; 1980s: $n = 4,888$; 1990s: $n = 3,833$; 2000s: $n = 4,037$.

^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bCivic behaviors: 0 = no civic participation, 1 = any civic behaviors.

^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (almost every day). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, last 12 months: 0 = No (0-2 occasions), 1 = Yes (3 occasions or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 1b. *Descriptive Statistics of Civic Engagement, Free Time, and Alcohol Use Activities for U.S. 12th Grade Boys*

Latent Indicator	Code	Label	1970s Freq. (Valid %)	1980s Freq. (Valid %)	1990s Freq. (Valid %)	2000s Freq. (Valid %)
Civic engagement						
Volunteer ^a	1	No	1808 (36.0)	1780 (38.4)	1102 (31.4)	1214 (32.4)
	2	Yes	3208 (64.0)	2854 (61.6)	2410 (68.6)	2539 (67.6)
	.	Missing	31	20	14	15
Civic behaviors ^b	1	No	3598 (73.7)	3726 (81.4)	2655 (76.1)	2949 (79.5)
	2	Yes	1287 (26.3)	851 (18.6)	835 (23.9)	763 (20.5)
	.	Missing	162	77	36	56
Free time						
Hobbies ^c	1	Low	2378 (47.1)	2346 (50.4)	1811 (51.4)	1852 (49.2)
	2	High	2669 (52.9)	2308 (49.6)	1715 (48.6)	1916 (50.8)
	.	Missing	3	4	5	2
Socializing ^c	1	Low	2220 (44.0)	2219 (47.7)	1654 (46.9)	1936 (51.4)
	2	High	2827 (56.0)	2435 (52.3)	1872 (53.1)	1832 (48.6)
	.	Missing	5	7	5	12
Sports ^c	1	Low	2389 (47.3)	2082 (44.7)	1601 (45.4)	1751 (46.5)
	2	High	2658 (52.7)	2572 (55.3)	1925 (54.6)	2017 (53.5)
	.	Missing	21	19	12	12
Religious services ^d	1	Low	2389 (48.3)	2445 (53.5)	1639 (54.8)	1773 (54.6)
	2	High	2555 (51.7)	2129 (46.6)	1352 (45.2)	1474 (45.4)
	.	Missing	103	80	535	521
Alcohol use						
Annual alcohol use ^e	1	No	942 (19.9)	1105 (24.9)	1249 (37.1)	1359 (38.0)
	2	Yes	3782 (80.1)	3325 (75.1)	2120 (62.9)	2222 (62.0)
	.	Missing	323	224	157	187
Heavy drinking ^f	1	No	2212 (47.1)	2296 (52.2)	2028 (60.9)	2163 (61.2)
	2	Yes	2487 (52.9)	2103 (47.8)	1302 (39.1)	1372 (38.8)
	.	Missing	348	255	196	233

Note. 1970s: $n = 5,047$; 1980s: $n = 4,654$; 1990s: $n = 3,526$; 2000s: $n = 3,768$. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bCivic behaviors: 0 = no civic participation, 1 = any civic behaviors. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (almost every day). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, last 12 months: 0 = No (0-2 occasions), 1 = Yes (3 occasions or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 2a. *Model Comparisons of Latent Class Analysis for U.S. 12th Grade Girls*

Number of classes	G^2	df	AIC	BIC
1970s		($n = 5302$)		
2	844	238	878	990
3	485	229	537	708
4	308	220	378	608
5	245	211	333	623
6	186	193	310	718
1980s		($n = 4888$)		
2	631	238	665	775
3	367	229	419	588
4	255	220	325	552
5	218	211	306	592
6	181	202	287	631
1990s		($n = 3833$)		
2	543	238	577	683
3	383	229	435	597
4	243	220	313	532
5	226	211	314	589
6	Did not converge			
2000s		($n = 4037$)		
2	530	238	564	672
3	321	229	373	537
4	235	220	305	526
5	215	211	303	580
6	190	202	296	631
Combined decades – Measurement free to vary				
2	1852	238	1886	2019
3	970	229	1022	1225
4	491	220	561	834
5	401	211	489	832
6	Did not converge			

Note. G^2 = likelihood ratio statistic; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion. Boldface font indicates the selected model.

Table 2b. *Model Comparisons of Latent Class Analysis for U.S. 12th Grade Boys*

Number of classes	G^2	df	AIC	BIC
1970s		($n = 5047$)		
2	744	238	778	889
3	451	229	503	673
4	353	220	423	651
5	296	221	384	671
6	Did not converge			
1980s		($n = 4654$)		
2	710	238	744	854
3	441	229	493	660
4	301	220	371	596
5	253	211	341	625
6	221	202	327	669
1990s		($n = 3526$)		
2	613	238	647	752
3	408	229	460	620
4	290	220	360	576
5	256	211	343	615
6	212	202	318	645
2000s		($n = 3768$)		
2	601	238	635	741
3	416	229	468	630
4	282	220	352	570
5	247	211	335	610
6	208	202	314	644
Combined decades – Measurement free to vary				
2	1525	238	1559	1685
3	920	229	972	1164
4	508	220	578	837
5	416	211	504	829
6	332	202	438	829

Note. G^2 = likelihood ratio statistic; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion. Boldface font indicates the selected model.

Table 3a. *Prevalence of Latent Classes and Item-Response Probabilities of U.S. 12th Grade Girls*

	Latent classes			
	Low-involved	Noncivic drinkers	Civic abstainers	Civic drinkers
Prevalence of latent classes				
1970s	.18	.20	.22	.39
1980s	.23	.25	.22	.31
1990s	.18	.15	.37	.30
2000s	.20	.20	.32	.27
Combined decades				
Item-response probabilities				
Volunteer ^a	.43	.50	.94	.94
Civic behaviors ^b	.08	.13	.24	.34
Hobbies ^c	.55	.52	.74	.70
Socializing ^c	.28	.66	.35	.55
Sports ^c	.20	.26	.37	.46
Religious services ^d	.43	.30	.75	.64
Annual alcohol use ^e	.47	.99	.09	.98
Heavy drinking ^f	.00	.74	.01	.40

1970s	Low-involved	Noncivic drinkers	Civic abstainers	Civic drinkers
Item-response probabilities				
Volunteer	.49	.31	.92	1.00
Civic behaviors	.06	.17	.33	.36
Hobbies	.57	.63	.88	.70
Socializing	.27	.64	.45	.59
Sports	.22	.29	.46	.45
Religious services	.63	.34	.80	.64
Annual alcohol use	.35	.99	.44	.98
Heavy drinking	.00	.63	.01	.59
1980s				
Item-response probabilities				
Volunteer	.42	.46	.91	.95
Civic behaviors	.08	.11	.20	.27
Hobbies	.50	.50	.73	.65
Socializing	.30	.66	.34	.61
Sports	.22	.26	.35	.43
Religious services	.32	.34	.80	.59
Annual alcohol use	.58	.99	.27	.99
Heavy drinking	.00	.82	.02	.46
1990s				
Item-response probabilities				
Volunteering	.44	.41	1.00	.94
Civic behaviors	.12	.11	.29	.33
Hobbies	.59	.41	.69	.62
Socializing	.31	.66	.32	.64
Sports	.17	.17	.37	.45

Religious services	.45	.16	.68	.53
Annual alcohol use	.32	1.00	.19	.98
Heavy drinking	.01	.71	.00	.55
<hr/>				
2000s	Low-involved	Noncivic drinkers	Civic abstainers	Civic drinkers
<hr/>				
Item-response probabilities				
Volunteer	.36	.35	.94	.91
Civic behaviors	.08	.10	.22	.27
Hobbies	.56	.43	.69	.61
Socializing	.30	.59	.30	.59
Sports	.14	.25	.37	.43
Religious services	.28	.22	.71	.49
Annual alcohol use	.45	.98	.19	1.00
Heavy drinking	.00	.87	.02	.52
<hr/>				

Note. The prevalence of latent classes indicates the number of girls classified in each group. Item-response probabilities indicate the proportion of individuals in that class who reported that activity. 1970s: $n = 5,302$; 1980s: $n = 4,888$; 1990s: $n = 3,833$; 2000s: $n = 4,037$. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bCivic behaviors: 0 = no civic participation, 1 = any civic behaviors. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (almost every day). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, last 12 months: 0 = No (0-2 occasions), 1 = Yes (3 occasions or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 3b. *Prevalence of Latent Classes and Item-Response Probabilities of U.S. 12th Grade Boys*

					Latent classes			
1970s					Noncivic drinkers	Civic abstainers	Civic drinkers	
Prevalence of latent classes					.36	.31	.33	
Item-response probabilities								
Volunteer ^a					.34	.68	.93	
Civic behaviors ^b					.18	.22	.40	
Hobbies ^c					.42	.59	.59	
Socializing ^c					.64	.41	.62	
Sports ^c					.42	.55	.62	
Religious services ^d					.29	.66	.63	
Annual alcohol use ^e					1.00	.37	.99	
Heavy drinking ^f					.79	.02	.72	
					Low-involved			
Prevalence of latent classes								
1980s					.10	.35	.25	.30
1990s					.11	.24	.36	.28
2000s					.12	.25	.37	.26

Combined decades	Low-involved	Noncivic drinkers	Civic abstainers	Civic drinkers
<hr/>				
Item-response probabilities				
Volunteer	.27	.24	.86	1.00
Civic behaviors	.07	.15	.24	.29
Hobbies	.35	.42	.60	.51
Socializing	.27	.64	.40	.63
Sports	.34	.47	.58	.67
Religious services	.21	.29	.64	.52
Annual alcohol use	.37	.99	.26	.99
Heavy drinking	.00	.79	.01	.74
<hr/>				
1980s				
<hr/>				
Item-response probabilities				
Volunteer	.21	.26	.81	.97
Civic behaviors	.08	.13	.20	.28
Hobbies	.36	.43	.62	.49
Socializing	.26	.64	.42	.60
Sports	.35	.48	.60	.67
Religious services	.17	.29	.66	.57
Annual alcohol use	.51	1.00	.34	1.00
Heavy drinking	.00	.82	.03	.75
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1990s	Low-involved	Noncivic drinkers	Civic abstainers	Civic drinkers
Item-response probabilities				
Volunteer	.39	.32	.87	1.00
Civic behaviors	.07	.18	.29	.33
Hobbies	.30	.41	.61	.51
Socializing	.27	.67	.44	.68
Sports	.31	.44	.61	.72
Religious services	.25	.29	.62	.50
Annual alcohol use	.33	1.00	.26	.98
Heavy drinking	.02	.80	.00	.78
2000s				
Item-response probabilities				
Volunteer	.22	.15	.90	.98
Civic behaviors	.06	.15	.23	.27
Hobbies	.40	.43	.58	.53
Socializing	.27	.61	.36	.60
Sports	.37	.46	.55	.63
Religious services	.21	.28	.63	.49
Annual alcohol use	.26	.98	.16	.98
Heavy drinking	.00	.76	.01	.68

Note. The prevalence of latent classes indicates the number of boys classified in each group. Item-response probabilities indicate the proportion of individuals in that class who reported that activity. 1970s: $n = 5,047$; 1980s: $n = 4,654$; 1990s: $n = 3,526$; 2000s: $n = 3,768$. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bCivic behaviors: 0 = no civic participation, 1 = any civic behaviors. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (almost every day). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, past 12 months: 0 = No (0-2 occasions), 1 = Yes (3 occasions or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

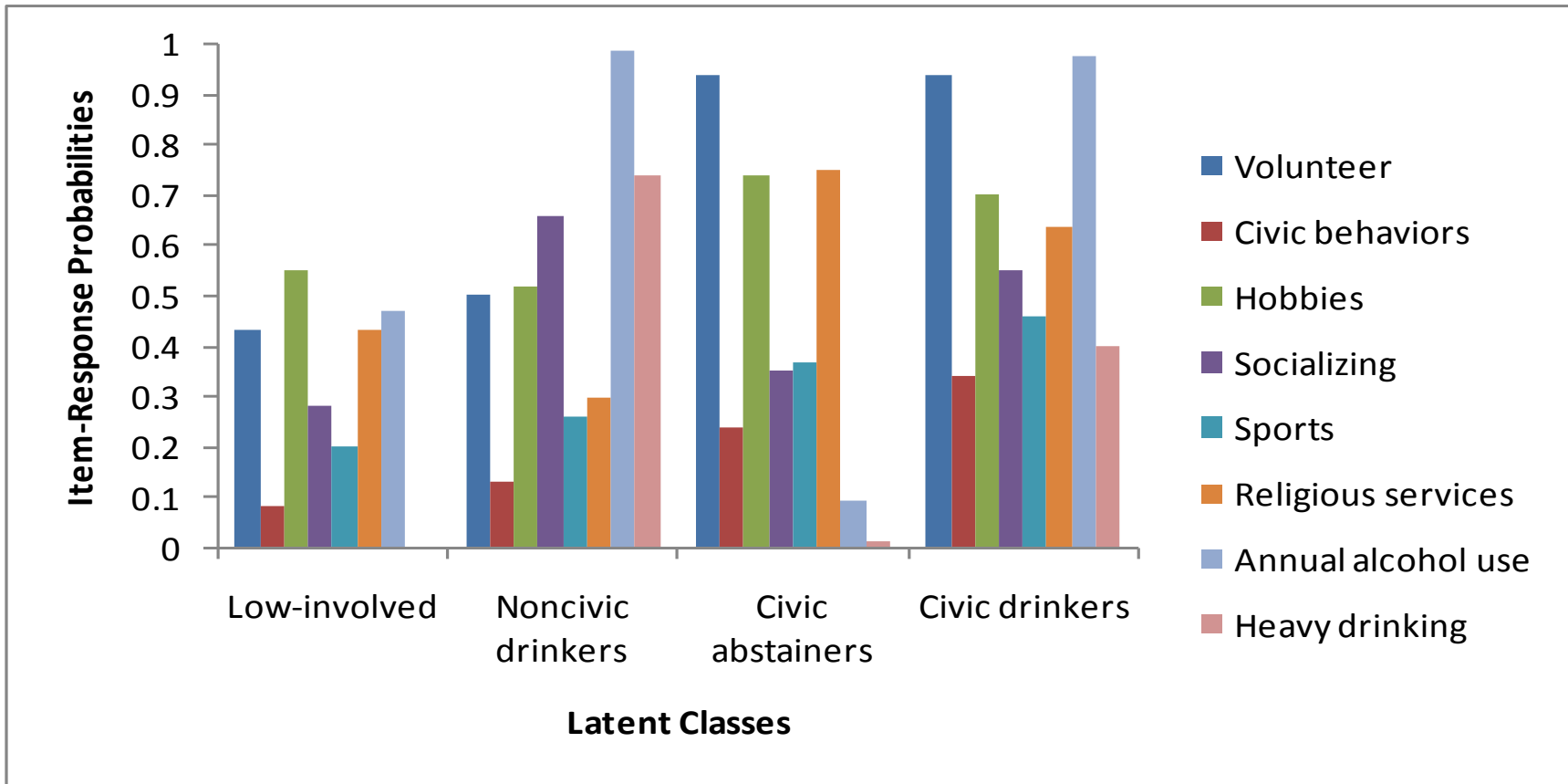


Figure 1a. *Item-Response Probabilities of Civic Engagement, Free Time, and Alcohol Use Discretionary Activities for U.S. 12th Grade Girls Across Combined Decades (1970s, 1980s, 1990s, and 2000s).*

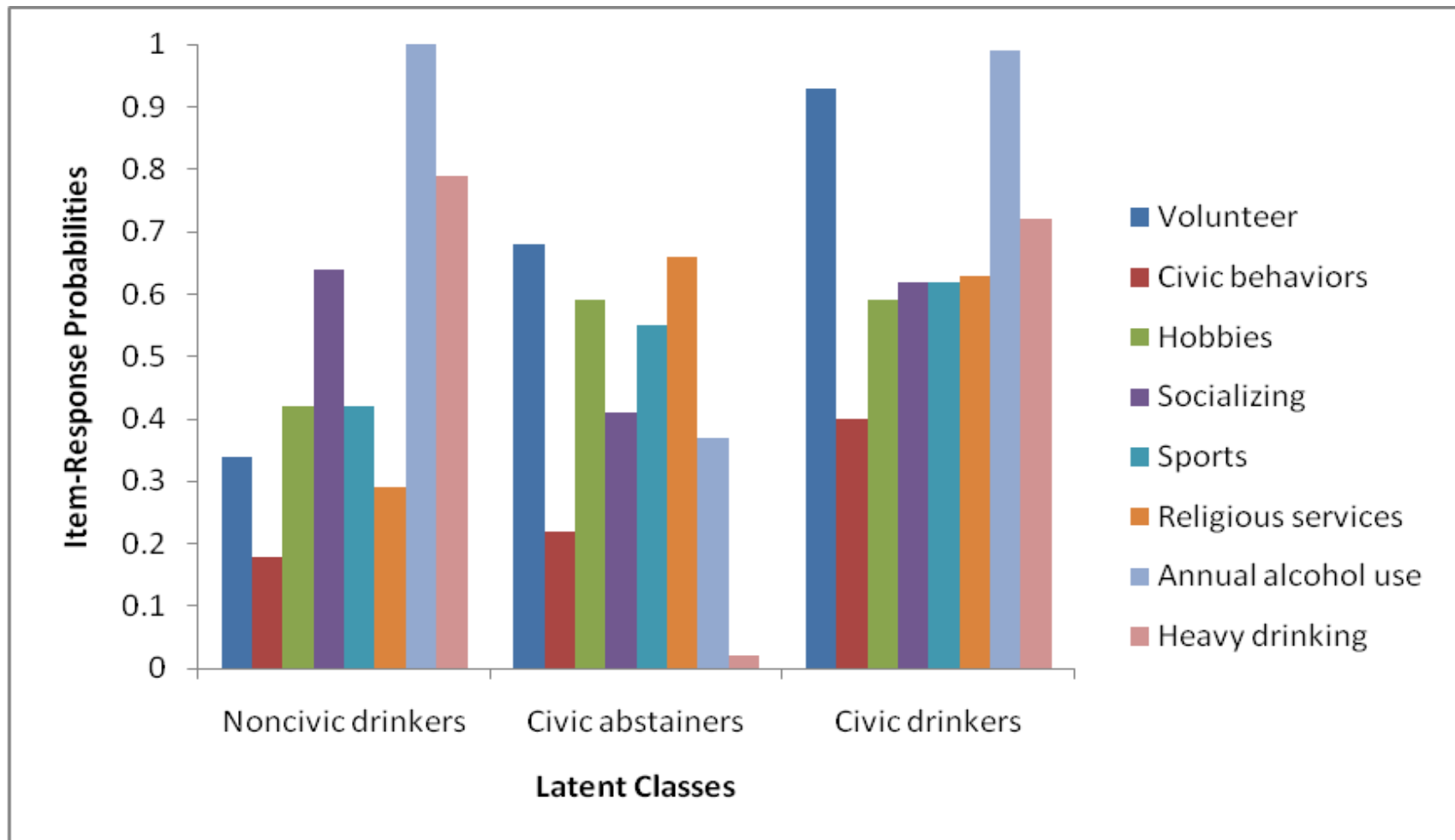


Figure 1b. *Item-Response Probabilities of Civic Engagement, Free Time, and Alcohol Use Discretionary Activities for U.S. 12th Grade Boys in the 1970s.*

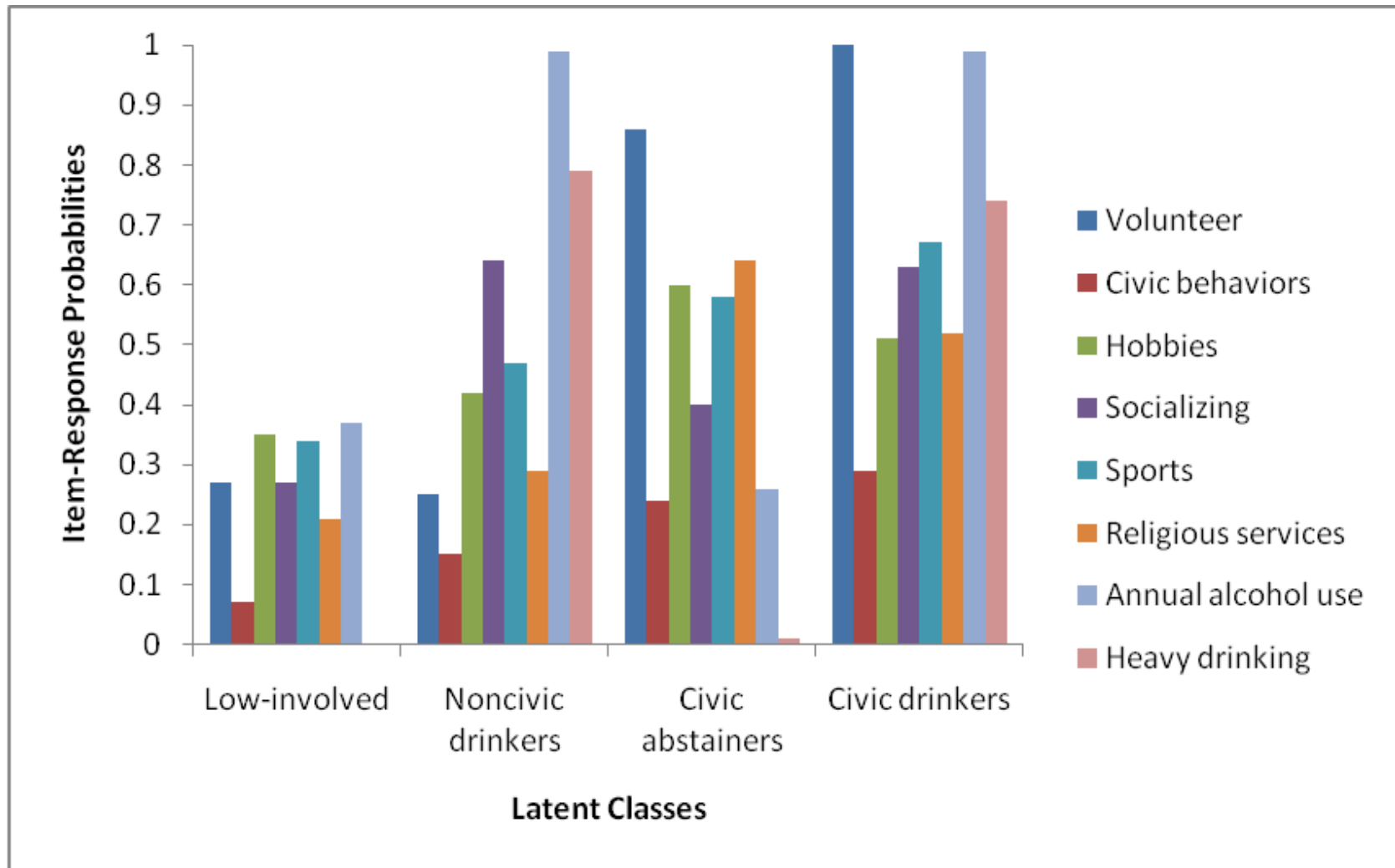


Figure 1c. *Item-Response Probabilities of Civic Engagement, Free Time, and Alcohol Use Discretionary Activities for U.S. 12th Grade Boys Across Combined Decades (1980s, 1990s, and 2000s).*

CHAPTER 3: DISCRETIONARY ACTIVITIES AMONG BRITISH ADOLESCENTS: LINKS WITH CIVIC ENGAGEMENT IN ADULTHOOD

Events, choices, and experiences that occur during adolescence have lasting effects on the developing person (Lerner, 1982). Outside of academic or work life, adolescents in the U.S. spend more than four hours a day in discretionary activities (U.S. Bureau of Labor Statistics, 2007), defined here as activities that are not necessarily school- or work-related, which provide opportunities for growth and development rarely found elsewhere in youth's lives (Larson, 2001). Time use rates of discretionary activities documented in the U.S. are similar to those in Europe (Larson & Verma, 1999), which suggests that adolescents in Western countries prioritize activities at the same level. Little work on adolescent discretionary activities has examined involvement across activity types from a person-centered perspective, instead focusing on isolated activities such as volunteer work (Metz & Youniss, 2005) or variable-centered relationships between two activities (Barber et al., 2001). However, we know that youth choose to be involved in a variety of activities during their adolescent years. Furthermore, the experiences offered and networks built through these combinations of activities very likely shape pathways to and outcomes in adulthood. In the current study, these combinations and their implications for adult civic engagement were explored. The current study examined the various ways adolescents in Britain combined civic engagement, free time, and alcohol use discretionary activities; compared these combinations with those found in the U.S.; and tested whether the combinations longitudinally predicted civic engagement in adulthood.

Understanding how adolescents use their discretionary time is important insofar as many choices made during this period set a young person on a lifelong path and have consequences for individuals as well as for society. For example, with respect to engagement in civic or

community activities, several studies have found that youth in the U.S. who volunteered or were involved in clubs while in high school had higher rates of political and community participation as adults (Jennings & Stoker, 2004; McFarland & Thomas, 2006; Oesterle, Johnson, & Mortimer, 2004; Smith, 1999). Civic engagement in one's youth, if continued into adulthood, may also have long-term benefits for health. Studies of adults show that civic engagement is associated with lower mortality and depression rates, and higher cognitive functioning (Harris & Thoresen, 2005; Morrow-Howell et al., 2003; Musick et al., 1999). Furthermore, the civic engagement of younger generations promotes a healthy democratic society (Smith, 1999).

The current study aimed to describe adolescent involvement across multiple discretionary activities and to explore the extent to which different in combinations of activities predicted civic engagement in adulthood. We hypothesized that participation across diverse activities would be important for civic engagement in adulthood: Compared to no involvement in discretionary activities or even to involvement in one activity, engagement in multiple activities offers a wider range of opportunities for skill development and social network formation which predict civic engagement in adulthood (Verba, Schlozman, & Brady, 1995). We tested whether adolescent activity combinations predicted adult civic engagement and whether combinations marked by a diverse range of activities predicted higher civic engagement than combinations marked by engagement in one or no activities.

Nationally representative data of British individuals participating in the longitudinal British Cohort Study (Butler et al., 1985; Bynner, Ferri, & Shepherd, 1997; Ferri, Bynner, & Wadsworth, 2003) were used to address Aims 3 and 4 of the dissertation. Aim 3 was to describe combinations of discretionary activities when the cohort members were adolescents and to examine whether these combinations replicated those found in the U.S. samples under Aims 1

and 2. Aim 4 was to investigate whether combinations of discretionary activities in adolescence predicted differences in civic engagement in adulthood at ages 26, 30, and 34. Thus, the third aim of the dissertation was a cross-national comparison whereas the fourth aim represented a longitudinal approach by exploring whether combinations of discretionary activities during the formative years of adolescence predicted civic engagement in adulthood.

Discretionary activities assessed during the final year of compulsory education were selected to tap into different aspects of adolescents' involvement in activities and were matched as closely as possible with the measured activities from Study 1. *Civic engagement* captured activities that expressed a commitment to society and the well-being of others, including volunteering and political club membership in adolescence, and voting and civic action (e.g., signed a petition, attended a public meeting or rally) in adulthood. *Free time* included activities that were part of adolescents' daily family and school lives but that did not contain an inherent commitment to society. For the purposes of this study, free time activities included hobbies, socializing, sports, and religious services. *Alcohol use* represented experimentation with potential risks to health and included two measures: annual alcohol use and heavy drinking in the prior two weeks.

Comparison of British and U.S. Discretionary Activities

Individual measures of civic engagement and alcohol use in Britain and the U.S. show that British rates tend to be higher. Among adults 18 to 34 years old, voter turnout rates were 55% in Britain and 38% in the U.S. in recent general elections (Office for National Statistics, 2011; U.S. Census Bureau, 2002). This is a marked decline from previous voting rates in both countries. For example, the 1983 voting rate for British 18- to 34-year-olds was 76% compared to a 1984 voting rate of 45% for U.S. 18- to 34-year-olds (Office for National Statistics, 2011;

U.S. Department of Commerce, 1984). In both countries declining rates of membership in voluntary and community organizations in recent decades have been noted (Bynner, 2005). Free time activities rates in both countries varied by the type of activity. Among 16-year-old British adolescents in 1986, 72% of girls and 75% of boys participated in sports (Feinstein, Bynner, & Duckworth, 2006). Sports rates were much lower among U.S. high school students; 25% of girls and 48% of boys reported playing sports (Stevenson, 2007). The two measure of sports participation varied by country and may explain the different rates. Examining alcohol use from 2007, a nationally representative study indicated that almost 88% of 16-year-olds used alcohol in Britain (Hibell et al., 2009), whereas national rates in the U.S were 66% among 12th graders (Johnston et al., 2009). This may in part reflect differences in the legal drinking age (Kuntsche et al., 2011). Although British individuals report higher rates of civic engagement and alcohol use than in the U.S., little is known about how adolescents in Britain may combine these or other activities. Thus we drew from studies in the U.S. to develop our hypotheses.

Predicting Civic Engagement in Adulthood

Civic engagement during adolescence (such as volunteering, campaigning, or engaging in certain kinds of extracurricular activities) has lifelong implications for citizenship. Though civic socialization begins prior to adolescence, the teenage years are critical for experiences in group settings that offer opportunities to explore moral and ideological views, to build civic skills, and to develop social networks that continue to recruit young people into civic life as they transition into adulthood (Damon, 2001; Erikson, 1968; Flanagan, 2004; Hart, 2005). Civic experiences in adolescence help youth to incorporate civic attitudes and behaviors into their emerging identities which persist over time and influence their engagement in adulthood (Youniss, McLellan, & Yates, 1997). Numerous studies have shown that involvement in volunteer service in

adolescence predicted higher intentions to engage civically in adulthood, including higher rates of valuing of one's community, higher intentions to vote and serve, and higher rates of social responsibility, and political and community participation in adulthood (Finlay, Flanagan, & Black, 2007; Jennings & Stoker, 2004; Johnson, Beebe, Mortimer, & Snyder, 1998; McFarland & Thomas, 2006; Metz & Youniss, 2005; Oesterle et al., 2004; Pancer et al., 2007; Smith, 1999).

There are a variety of reasons why being involved in a combination of discretionary activities may explain greater civic engagement in adulthood. First, involvement across several activities may suggest a sociable personality or an genetic basis for engagement (Fowler, Baker, & Dawes, 2008). Second, involvement in a variety of clubs or organizations may provide lasting friendships and social networks which lead to later recruitment into civic activities (Hanks & Eckland, 1978; Smith, 1999) and increased tolerance for diverse viewpoints (Finlay et al., 2007). Third, individuals involved in a range of activities may have more diverse opportunities to gain civic skills and competencies that carry into adulthood (Hanks & Eckland, 1978). Research on adults indicates that such civic resources are stockpiled over a lifetime (Verba et al., 1995). Fourth, multidimensionality may also explain the benefits of involvement across activities; youth may learn skills in one area that may be practiced in another area which can reinforce and strengthen competencies.

Though these mechanisms could not be directly tested in the current study, they provide guidance as to why we expected that activity involvement in adolescence might be linked with civic engagement in adulthood. We hypothesized that adolescents who exhibited combinations of diverse discretionary activities would have higher rates of civic engagement in adulthood as compared to their counterparts who were involved in one or no activities. Involvement in diverse discretionary activities was conceptualized as participation in multiple activities rather than an

absolute number of activities to account for the complexity of experiences and interrelationships that can contribute to development. Through participating in a variety of activities young people may be more likely to gain the skills and social networks necessary to engage civically in adulthood.

Effects of Volunteering

Experiences during adolescence and young adulthood matter for later engagement. Selection effects, due for example to underlying sociability or enduring genetic differences between people (Son & Wilson, 2010), may account for some of the increased civic participation of adolescents who are involved in free time activities, but quasi-experimental studies of mandated volunteering also show that an ethic of service is gained from involvement, even among initially less motivated youth. For example, a longitudinal study of adolescents who were less inclined to volunteer but who did so for a school requirement showed they had increased intentions to volunteer and vote at the end of Grade 12 (Metz & Youniss, 2005).

Two studies with young adults addressed similar selection effects with quasi-experimental designs. In one, AmeriCorps volunteers were matched with a comparison group who investigated but never applied to AmeriCorps. Volunteers showed greater gains in their civic attitudes and behaviors than comparison group members as long as seven years after serving (Corporation for National and Community Service, 2008). Furthermore, in contrast to the comparison groups who also voted at the first wave, AmeriCorps members became even more engaged in community affairs eight years after their initial involvement in the program (Finlay, Flanagan, & Wray-Lake, 2011). In the second study, volunteers who participated in Freedom Summer were matched with individuals who were accepted into the volunteer program but chose not to participate (McAdam, 1989). Volunteers were more politically active than the comparison

group both in the short-term and over 20 years later. Although neither study was able to fully address selection effects because the comparison groups were comprised of individuals who were interested but ultimately chose not to participate, these results lend support to the thesis that an ethic of civic engagement is nurtured through involvement in community volunteerism during one's youth. The current study extended these results by examining combinations of discretionary activities, including volunteering, that may be positively associated with civic engagement in adulthood.

Combining Person-Centered and Variable-Centered Analyses

Development is complex and necessitates examining multiple factors and their interrelations simultaneously (Bergman & Magnusson, 1997; Nunis & Macy, 2008; von Eye & Bogat, 2006). Previous research has documented relationships between civic engagement, free time, and alcohol use activities, but had used a variable-centered approach that described the overall sample and that assumed relationships between variables held across populations. In contrast, a person-centered approach would describe differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). Person-centered analysis classifies individuals into subgroups through their distinct constellations of behaviors, including subgroups that run counter to mean-level associations in the overall sample.

Previous studies have used person-centered analyses to cluster individuals by their discretionary activities and then utilized variable-centered analyses to examine their attitudes or behaviors. However, past work has typically clustered individuals based on their activities within a particular type. For example, in a Canadian sample, adolescents were grouped by their community and political involvement using person-centered analyses (Pancer et al., 2007). Following that, differences in identity development and social and emotional adjustment among

the groups were described using variable-centered techniques. Adolescents involved in a diverse number of activities, (i.e., *activists, helpers, responders*) had higher rates of identity achievement, self-esteem, and optimism than the *uninvolved*. Studies that used person-centered analyses to group U.S. adolescents by their involvement in volunteer and free time activities (e.g., after-school clubs, sports, arts and hobbies, religious youth groups) tested differences between the groups and found that adolescents who were highly involved in activities tended to have higher scores on measures of positive youth development (e.g., social well-being, school connectedness) and contribution to families and communities (e.g., leadership, helping) than the *uninvolved* profile of youth (Linver et al., 2009; Zarrett et al., 2009). A study investigating engagement in active, creative, performance, and social leisure activities among South African adolescents in the HealthWise program (Caldwell et al., 2004) found profiles of youth classified as *non-participants; active and creative engaged* (motivated engagement); *active, creative, and social disengaged* (amotivated engagement); and *active, creative, and social engaged*. Among girls, two additional profiles of *social disengaged* and *social engaged* were found and a *mixed engagement* profile was found among boys. The prevalence of alcohol and tobacco use was higher among youth who were members of the *active, creative, and social disengaged* profile as compared to the other profiles (Tibbits, 2009). These studies show that combining person-centered and variable-centered approaches provides complementary information about adolescents.

Although person-centered work has not combined civic engagement, free time, and alcohol use discretionary activities, there is extant variable-centered work examining these three areas. Civic engagement has been linked with lower rates of alcohol use among adolescent girls and boys in several studies (Barber et al., 2001; Chassin et al., 1999; Michelsen et al., 2002), but

a longitudinal study indicated that boys who increased their volunteer service were more likely to become regular drinkers (Vicary et al., 1998). In other longitudinal work, sports participation was associated with increased rates of wanting to contribute to one's community and society as well as increased social responsibility (e.g., attitudes, competence, and efficacy) (Brunelle et al., 2007; Zarrett et al., 2009). However, another study found no association between sports and civic engagement (Kahne & Sporte, 2008). Sports and alcohol use (e.g., frequency of drinking, number of drinks consumed) have been positively associated across a number of analyses (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003; Fredricks & Eccles, 2005; Wichstrom & Wichstrom, 2009). In summary, past work has shown relationships between two activities. However, no studies have examined civic engagement, free time, and alcohol use discretionary activities together. The current study used a person-centered approach to examine how adolescents combined a variety of discretionary activities and utilized a variable-centered approach to predict civic engagement in adulthood.

The Current Study

The current study was based on a lifespan developmental perspective (Baltes, 1987). Two assumptions of this perspective that informed the analyses were: (a) multidimensionality, and (b) development as a lifelong process. Multidimensionality was examined in the third aim through investigating the combinations of discretionary activities. The fourth aim investigated development as a lifelong process by utilizing variable-centered analyses with longitudinal data to explore links between combinations of discretionary activities and civic engagement in adulthood. Through these analyses, differences in adult civic engagement by adolescent combinations of discretionary activities were tested and described.

Hypotheses

There were two aims for the current study. For the third aim of the dissertation, we described combinations of discretionary activities in a British sample and examined whether these combinations replicated those found in the U.S. samples. We hypothesized that the same three classes – uninvolved, sports-only, and highly-involved – would be identified in the British adolescent sample. As with the Study 1, analyses were conducted separately by gender due to mean-level differences in volunteering, sports, and alcohol use found among adolescents (Caspersen et al., 2000; Johnston et al., 2009; Lopez et al., 2006). For the fourth aim, we hypothesized that youth classified as highly-involved would be associated with higher rates of civic engagement in adulthood compared to youth classified as sports-only or uninvolved. This hypothesis was based on previous studies that found that types of individuals who were engaged in combinations of discretionary activities such as a variety of civic engagement or volunteer and free time activities had higher rates of identity achievement, self-esteem, positive youth development (e.g., social well-being, school connectedness), and contribution to families and communities (e.g., leadership, helping) than groups of adolescents who were classified by combinations of low levels of involvement across activities (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009).

Method

The British Cohort Study 1970 (BCS70) is an ongoing national longitudinal study that has followed a cohort of individuals from their births to 38 years old (Butler et al., 1985; Bynner et al., 1997; Ferri et al., 2003) with future data collection planned in 2012 and every subsequent four years. Individuals born in one week in the U.K. (England, Scotland, Wales, and Northern Ireland) in 1970 (98% of those born during that week) were studied at birth and respondents from England, Scotland and Wales were followed from childhood through adulthood. Follow-up

data collected at ages 5, 10, 16, 26, 30, and 34 were utilized in the present study. A multi-method, multi-informant approach has been used in the BCS70, with information gathered from parents, teachers, schools, medical professionals, and primary participants. The original study focused on health, and has successively expanded to examine physical, educational, civic, and social development. In total, 17,287 participants were included at birth (Plewis, Calderwood, Hawkes, & Nathan, 2004). Immigrants born during the same week were identified and added at subsequent child and adolescent waves up to and including age 16. Representing the population of Britain in 1970, only 8% of participants were people of color (Brewer & Haslum, 1986). Due to heterogeneity and the small size of the subsample, analyses do not focus on race/ethnicity.

The BCS70 cohort was 16 years old during the same year the majority of participants in the MTF 1988 cohort were also 16 years old. Both studies (BCS70 and MTF) were conducted during the final year of compulsory education in each country; however, the interpretation of the results has taken into account the two-year age difference of participants. Data collection was approved by the Medical Review Council based in the U.K. and the current analyses were approved by the Pennsylvania State University Institutional Review Board. All data were accessed through and downloaded from the publically available UK Data Archive (<http://www.data-archive.ac.uk/findingData/bcsTitles.asp>).

Participants

To be included in the present study, individuals must have participated in the age 16 survey and provided data for at least one of the discretionary activity items due to the importance of this wave for determining the latent classes. In total, 3,795 girls and 2,887 boys were available for analysis at age 16. In addition, participants must have responded to at least one of the adult surveys at ages 26, 30, or 34. Following these restrictions, a total of 3,795 females (57%) and

2,887 males were included. Attrition at age 16 was due in large part to a teachers' strike during data collection that limited collection of surveys in schools, although some data were collected through contacting individuals at their home addresses (Goodman & Butler, 1996). Response bias at age 16 has been shown to be small (Shepherd, 1997). Age 26 attrition was also notable and it has been suggested that this was due to several methodological issues at this wave: participants could opt out for themselves (in contrast to prior surveys where parents were the main contact to opt out); there was a 10-year gap from the prior survey; and the survey was conducted through postal contact rather than in person as in prior waves (Ketende, McDonald, & Dex, 2010). We conducted additional attrition analyses to examine whether participants selected for the current study differed from other BCS participants on a variety of measures from the birth and child (age 5 and 10) surveys. Results for these analyses are displayed in Table 4.

At age 16, compared to youth who stayed in the study those who dropped out were more likely to be male and have higher birthweight, to have a mother who smoked during pregnancy or was unmarried, and to have parents from low social class backgrounds at all prior waves. In addition, attriters were more likely to have externalizing problems at age 5 but less likely to have these problems at age 10, to have high self-esteem, and to show less evidence of puberty at age 10. At age 26, those who left the study showed the same differences observed at age 16 except that there was no significant difference in the social class of their fathers at birth, their birthweight, or their self-esteem at age 10. At age 30, attriters were more likely to be male, but showed no other differences. Finally, at age 34, those who left the study were more likely to be male and to have a mother who was unmarried at birth. Attriters were more likely to show externalizing behaviors at age 5 but less likely to show this behavior at age 10. In addition, they were less likely to vote or be a union member at age 30.

Participants at age 16. At age 16, participants included 3,795 girls (57%) and 2,887 boys, representing 48% of those initially providing data at birth. From the prior wave 556 dropped out, an 86% retention rate from age 30. Of the participants who were available at age 16, 98% gave at least one wave of data in adulthood.

Participants at age 26. At age 26, there were 2,831 women (61%) and 1,834 men. From the prior wave 2,017 attrited indicating a 70% retention rate from age 16. Among women who remained in the study at age 26, 66% were single, 35% were married, and 4% were separated, divorced, or widowed. Most did not have children living in their household (72%). The majority of women at this age rated their general health as good or excellent (92%). These women, on average, were moderately satisfied with their lives ($M = 7.4$, $SD = 1.8$, on a scale from 0 [completely dissatisfied] to 10 [completely satisfied]). Among men who remained in the study at age 26, 77% were single, 21% were married, and 2% were separated, divorced, or widowed. Most did not have children living in their household (84%). The majority of men rated their general health as good or excellent (92%). These men, on average, were moderately satisfied with their lives ($M = 7.2$, $SD = 1.8$, on same response scale).

Participants at age 30. Participants at age 30 were 2,524 women (61%) and 1,589 men. From the prior wave 552 participants did not provide data, indicating an 88% retention rate from age 26. Among women who remained in the study at age 30, 46% were single, 49% were married, and 5% were separated, divorced, or widowed. About half had children living in their household (51%). A majority rated their general health as good or excellent (87%), and their life satisfaction ratings were similar to age 26 ($M = 7.5$, $SD = 1.8$, on a scale from 0 [completely dissatisfied] to 10 [completely satisfied]). Among men who remained in the study at age 30, 58% were single, 39% were married, and 3% were separated, divorced, or widowed.

About two-thirds had children living in their household (68%). The majority of men, though slightly less than age at 26, rated their general health as good or excellent (86%). On average, men at age 30 rated their life satisfaction at a similar level to their age 26 ratings ($M = 7.3$, $SD = 1.7$, same response format).

Participants at age 34. At age 34, participants were 2,210 women (62%) and 1,347 men. From the prior wave 556 participants did not provide data indicating an 86% retention rate from age 30. Among women who remained in the study at age 34, 35% were single, 57% were married, and 7% were separated, divorced, or widowed. About two-thirds had children living in their household (67%). Four-fifths of women rated their general health as good or excellent (80%). The average rating of life satisfaction did not change from age 30 to 34 ($M = 7.5$, $SD = 1.8$, on a scale from on a scale from 0 [completely dissatisfied] to 10 [completely satisfied]). Among men who remained in the study at age 34, 44% were single, 53% were married, and 4% were separated, divorced, or widowed. About half had children living in their household (51%). More than four-fifths of men rated their general health as good or excellent (83%). On average, these men were moderately satisfied with their lives ($M = 7.4$, $SD = 1.7$, same response format).

Measures

Adolescent civic engagement, free time, and alcohol use activity measures were drawn from the age 16 survey and were selected to closely match the survey of U.S. adolescents in Study 1. Descriptive statistics of the discretionary activity measures for girls and boys at age 16 are displayed in Table 5. Adult civic engagement measures were obtained from the ages 26, 30, and 34 surveys. Descriptive statistics of the adult civic engagement measures for women and men are shown in Table 6.

Civic engagement, age 16. Two indicators assessed civic engagement during adolescence. Adolescents were asked how often they did the following: (a) Volunteer or community work, and (b) attend a meeting or Political club (Feinstein, Bynner, & Duckworth, 2005). Response options were 1 = *rarely or never*, 2 = *less than once a week*, 3 = *once a week*, and 4 = *more than once a week*. As opportunities for civic engagement were not necessarily available on a daily basis at school, responses were coded into 1 = *no* (1) and 2 = *yes* (2 through 4) to capture any individuals who participated in these activities.

Free time, age 16. Free time activities assessed how often adolescents did various activities in their spare time (Sacker & Cable, 2006). The response scale was 1 = *rarely or never*, 2 = *less than once a week*, 3 = *once a week*, and 4 = *more than once a week*. The items were selected to match the free time activities from the MTF survey and were grouped into the same categories as Study 1 based on the activity content. The maximum reported value for each activity was used. Hobbies/crafts (i.e., Cook partly for fun; Sew partly for fun; Knit partly for fun; Do decorating/DIY; Make models or other craftwork; Draw or paint for fun; Play a musical instrument), Socializing (Have friends around to my house; Go to a friend's house; Go out with brother(s)/sister(s); Go out with friends; Go out with girl/boyfriend), and Sports (Play sports [at club/centre]; Play sports [in street/park/playground]; Go to dance classes; Ride a bike around; Go rollerskating or skateboarding; Do keep fit/aerobics) were coded as 1 = *low participation* (1 through 3) and 2 = *high participation* (4). These activities could have been available on a daily basis and the cut-off was chosen to differentiate between youth who were sporadically engaged or less committed to these activities versus adolescents who were highly committed. Attendance at Religious services was measured by one item with the following response options: 1 = *occasionally*, 2 = *once or twice a month*, 3 = *once a week*, and 4 = *more than once a week*.

Response options were coded to 1 = *low attendance* (1 or 2) and 2 = *high attendance* (3 or 4) to differentiate between youth who may have attended only during the holidays or special occasions versus those who were regularly committed to religious activities.

Alcohol use, age 16. Annual alcohol use, whether an adolescent ever consumed alcohol in the past 12 months, was measured by one question. Response options were 0 = *no drinking*, 1 = *special occasions only*, 2 = *about once a month*, 3 = *about once a week*, 4 = *2-3 times a week*, 5 = *4-5 times a week*, and 6 = *every day or most days*. Responses were coded into 1 = *no/only on special occasions* (0 or 1) and 2 = *yes, once a month or more* (2 through 6) to distinguish between adolescents who may have consumed alcohol at special family events versus adolescents who drank more regularly with their friends during their discretionary time. Heavy drinking was measured with one question that asked whether the adolescent had consumed 4 or more drinks in a row in the previous two weeks. Response options were 1 = *no heavy drinking* and 2 = *yes, heavy drinking*. The alcohol use activity variables were selected to capture youth who may have consumed alcohol on occasion over the course of a year as well as individuals who drank alcohol heavily

Civic engagement, adult waves. At ages 26, 30, and 34, Political interest was assessed by asking participants how interested they were in politics (Deary, Batty, & Gale, 2008; Denny & Doyle, 2008). Response options were 1 = *not at all interested*, 2 = *not very interested*, 3 = *fairly interested*, and 4 = *very interested* and were coded into 0 = *low political interest* (1 or 2) and 1 = *high political interest* (3 or 4). This item was coded from a continuous variable to a dichotomous variable to match the other dichotomous civic variables and because the response options only seemed to represent low and high. Voting behaviors were assessed at ages 30 and 34 and asked whether the individual voted in the 1997 and 2001 general elections, respectively.

Both elections occurred three years prior to data collection. Response options were 0 = *no* and 1 = *yes* (Deary et al., 2008; Denny & Doyle, 2007; Feinstein et al., 2006). Voting rates among BCS participants were lower than the general U.K. population in 1997, but higher in 2001. In 1997, 70% of women and 67% of men ages 25 to 34 years old voted in the election nationally (71% turnout rate of registered voters), compared to 65% of women and 60% of men in the current study (Office for National Statistics, 2011). In 2001, 56% of women and 59% of men ages 25 to 34 years old voted whereas 64% of women and 63% of men from this current sample voted (59% turnout rate of registered voters).

At age 30, two additional civic engagement measures were assessed. Organizational membership questions asked whether participants were ever in their lifetime part of an organization, including political parties, environmental charities, voluntary groups, women's groups, parent/school organizations, and tenants/residence organizations (Denny & Doyle, 2008; Feinstein et al., 2006; Paterson, 2008). Responses were coded as 0 = *no* and 1 = *yes*. Union membership was assessed by asking participants whether they were currently a member of a Trade Union or Staff Association (Arulampalam & Booth, 2000; Paterson, 2008). Responses were coded as 0 = *no* and 1 = *yes*.

At age 34, two additional civic engagement measures were assessed. Civic action was measured by four items asking participants whether they had ever (a) attended a public meeting or rally, (b) taken part in a public demonstration or protest, (c) signed a petition, or (d) contacted a government official (Deary et al., 2008; Wray-Lake, Finlay, & Maggs, 2008). Responses options were coded as 0 = *no civic action* (no to all four items) and 1 = *yes, civic action* (yes to any of the four items). Social trust was measured by asking participants how much they trusted people in their local area. Response options were 1 = *not at all*, 2 = *not very much*, 3 = *a fair*

amount, and 4 = a lot and were coded into 0 = low social trust (1 or 2) and 1 = high social trust (3 or 4). This item was coded from a continuous variable to a dichotomous variable to match the other dichotomous civic variables and because the response options only seemed to represent low and high.

Plan of Analysis

Gender differences in activities. In a preliminary step we examined whether girls and boys differed on mean levels of all discretionary activity measures due to differences in volunteering, sports, and alcohol use found in previous research (Caspersen et al., 2000; Johnston et al., 2009; Lopez et al., 2006). Girls and boys were significantly different on all activities except for religious services (t values ranged from 2.18 to 18.27, $p < .05$). Thus, in all subsequent analyses, each gender was examined separately.

Model specification. To examine adolescent patterns of involvement in discretionary activities we used Latent Class Analysis, a technique that describes differences between subgroups of people within a population based on individual characteristics (Collins & Lanza, 2010). LCA models with two, three, four, five, and six latent classes were compared to identify the best fitting model using 100 random starting values for each model. LCA was conducted separately for girls and boys to determine whether the optimal solution reflected the same number and characteristics of classes. In total, two separate sets of models were tested.

Model selection. The best fitting model for each gender was determined through examination of a variety of fit statistics and judgments about the parsimony (a smaller number of classes), interpretability (the item-response probabilities clearly distinguished one group from another), and stability. Better fits were indicated by lower likelihood-ratio G^2 statistic, Akaike's information criterion (AIC, Akaike, 1974), and Bayesian information criterion (BIC, Schwarz,

1978). When these indicators were contraindicated, the model with the smallest BIC value was selected. Models were also selected based on stability, which was tested separately for each number of classes. Stability was defined here as the number of models that converged on the exact same solution (e.g., the G^2 statistics, AIC, and BIC parameters) using 100 random starting values. Models equal to or closest to 100% convergence were considered more stable with at least two-thirds of the models converging. Models were estimated using SAS PROC LCA. Missing data on latent class indicators was accommodated through the full information maximum likelihood estimations using the EM algorithm as implemented in PROC LCA (Lanza et al., 2008).

Model interpretation. Two sets of parameters were estimated and used to describe the profiles of discretionary activities identified: class membership probabilities and item-response probabilities (Collins & Lanza, 2010). *Class membership probability* is the probability that an individual is a member of a specific discrete class with a higher likelihood indicating that an individual is more likely to be in that class. Individuals were classified into the group in which they had the highest probability of being a member. We reported the average class membership probability, which was the average likelihood of being in a certain class for all members of that class. *Item-response probability* is the probability of endorsing a specific item taking class membership into account. Item-response probabilities range from 0 to 1, with higher than .5 representing a greater likelihood, and lower than .5 representing a lower likelihood of responding affirmatively to the item. Contrasts between the groups based on their item-response probabilities (e.g., did one group have a strongly likelihood of reporting a specific activity versus another group that was unlikely to report that activity) were used to name the groups.

Longitudinal analysis. Logistic regression was used to predict differences in adult civic engagement from the identified adolescent civic engagement, free time, and alcohol use combinations of discretionary activities. The groups were dummy coded with the group with the lowest involvement as the reference group for each gender because this group was assumed to have the fewest opportunities to be recruited into civic life due to a lack of involvement in the measured activities and, thus, would be the least civically engaged in adulthood.

Results

Model Selection

As described in the Method section, LCA models were conducted separately by gender and the fit for each model is reported in Table 7 (top for girls, bottom for boys). The three-class model, shown in bold, was selected as the best fitting model for both genders because it had the smallest BIC value and was more parsimonious than the four-class model. Incremental decreases in the AIC and BIC up to the three-class model suggested improvement in fit, whereas the BIC increased between the three- and four-class solutions for girls. The BIC value was slightly smaller for the four-class solution for boys, but stability tests with 100 random starting values indicated the model was unstable. For girls, 100% of the three-class models converged on the same solution, whereas only 91% of the four-class models did. For boys, 100% of the three-class models converged on the same solution, whereas only 58% of the four-class models did. Moreover, the three-class model was clearly distinguishable and interpretable. The fit statistics combined with the interpretability and the stability across the 100 random starting values provided consistent evidence that the three-class model represented the best overall fit.

Prevalence of Latent Classes and Item-Response Probabilities: Girls

The estimated prevalence of membership in each of the three classes for girls is provided in the first row of Table 8a. The first class was labeled the *low-involved* and had a prevalence rate of 44%. The average class membership probability for all participants assigned to the low-involved class was .82 ($SD = .14$), ranging from .37 to .99. The second class had a similar prevalence rate with 42% and was labeled the *noncivic drinkers*. The average class membership probability for all participants assigned to the noncivic drinkers class was .73 ($SD = .21$), ranging from .38 to .99. The third class, the *civic drinkers*, had a prevalence rate of 13%. The average class membership probability for all participants assigned to the civic drinkers class was .69 ($SD = .16$), ranging from .37 to .99. The affirmative item-response probabilities for each class of girls, that is, the proportion of girls in each class who indicated involvement in each activity, are displayed in Table 8a below the prevalence rates. In addition, Figure 2a plots the item-response probabilities to provide an alternate way of viewing these data.

Low-involved class. Girls in this class were relatively uninvolved in all activities compared to their peers in the other two classes. Two-thirds endorsed socializing, but this was the lowest across the classes. Two-fifths participated in sports and one-third reported hobbies and annual alcohol use. Very few, however, endorsed either civic engagement activity, religious services, or heavy drinking.

Noncivic drinkers class. Girls in this class were most distinguished from the other two classes by their strong endorsement of both alcohol use activities, with almost all reporting annual alcohol use and two-thirds endorsing heavy drinking as well as almost universal engagement in socializing. One-third of girls in this class participated in sports and hobbies, and very few reported participation in either civic engagement activity or religious services.

Civic drinkers class. Almost two-thirds of the girls in this class participated in volunteering and almost a quarter participated in a political club, indicating notably higher civic engagement than either of the other two classes. This third class was also distinguished by relatively high participation in all four free time activities. Religious participation was notably higher at 46% than among the other two classes, and hobbies, socializing, and sports were relatively high, with three-fourth involved in each activity. Almost half of this class was involved in annual alcohol use and one-fifth reported heavy drinking. Although these drinking rates were lower than the noncivic drinkers class, both were higher than the low-involved class.

Prevalence of Latent Classes and Item-Response Probabilities: Boys

The estimated prevalence of membership in each of the three classes for boys is provided in the first row of Table 8b. The first class was labeled the *low-involved* and had a prevalence rate of 42%. The average class membership probability for all participants assigned to the low-involved class was .72 ($SD = .20$), ranging from .40 to .98. The second class had a similar prevalence rate of 40% and was called the *noncivic drinkers*. The average class membership probability for all participants assigned to the noncivic drinkers class was .77 ($SD = .19$), ranging from .39 to .95. The third class, the *civic drinkers*, had a prevalence rate of 18%. The average class membership probability for all participants assigned to the civic drinkers class was .71 ($SD = .18$), ranging from .38 to 1.00. The affirmative item-response probabilities, that is, the proportion of boys in each class who indicated involvement in each activity, for each class of boys are displayed in Table 8b below the prevalence rates. The item-response probabilities for boys are also plotted in Figure 2b.

Low-involved class. Boys in this class were relatively uninvolved compared to the other two classes of boys. Two-thirds endorsed socializing and sports but this did not distinguish the

low-involved boys from the other two classes who also reported relatively high engagement in these two activities. Almost half of the low-involved boys reported annual alcohol use and a quarter participated in hobbies, but these rates were lower than the other two classes. Very few endorsed volunteering, political club, religious services, or heavy drinking.

Noncivic drinkers class. Boys in this class were most distinguished by their strong endorsement of both alcohol use activities, with all reporting annual alcohol use and 70% reporting heavy drinking as well as an almost universal endorsement of socializing. More than two-thirds were involved in sports and a quarter participated in hobbies, but these behaviors did not vary from the low-involved class. Very few – less than one-tenth – of the noncivic drinkers participated in volunteering, political club, or religious services.

Civic drinkers class. Boys in this class reported moderate to high participation in almost all of the activities. They exhibited higher participation in both civic engagement activities than the other two classes with 58% participating in volunteering and 38% engaging in political club. Half participated in hobbies and a quarter attended religious services, which represented the highest rates for those activities across all the classes. Although their engagement in socializing and sports did not distinguish the civic drinkers from the other two classes of boys, they were relatively involved in these activities at 74% and 65%, respectively. Finally, the civic drinkers were moderately engaged in annual alcohol use and somewhat unlikely to engage in heavy drinking though more likely than the low-involved boys.

Comparison of British and U.S. Adolescents

Girls. Combinations of discretionary activities found in the British sample of adolescent girls were similar to those observed in the U.S. samples of adolescent girls, with some notable differences. The three classes of low-involved, noncivic drinkers, and civic drinkers were found

in both the British and U.S. samples with an additional class of civic abstainers found in the U.S. samples. The low-involved class in the British sample was similar to the low-involved in the U.S. samples in that these adolescents were relatively uninvolved in activities compared to the other classes. The noncivic drinkers class in both countries was mostly distinguished by relatively high participation in both alcohol use activities and in socializing, and lower participation in other activities. Civic drinkers adolescents in the British sample and the U.S. samples were involved in a variety of activity, however, British girls in this class were less involved in either alcohol activities. In contrast to the U.S. samples, the British sample did not show a civic abstainers class of girls. Results suggest that aside from volunteering, the two other measures of civic engagement (i.e., political clubs in Britain, civic behaviors in the U.S.) were relatively rare in both samples.

Boys. Combinations of discretionary activities found in the British adolescent sample were similar to those found in the U.S. adolescent samples, with some notable differences. Three classes were found in samples from both countries: low-involved, noncivic drinkers, and civic drinkers, with a fourth class of civic abstainers found in the U.S. samples. The low-involved class in the British sample was similar to the low-involved in the U.S. samples in that adolescents in this class were relatively uninvolved in activities compared to the other classes. Noncivic drinkers youth in both countries were mostly distinguished by relatively high participation in both alcohol use activities and in socializing, and lower participation in other activities. The U.S. group of civic abstainers did not have a parallel in Britain, but the civic drinkers in each country were similar. As with girls, the two other civic engagement activities we measured aside from volunteering were fairly rare among boys in samples from both countries. Although there were some differences between the samples from the two countries, the classes were fairly similar and

suggest that longitudinal patterns observed in the British sample may generalize somewhat to the U.S. samples.

Predicting Civic Engagement in Adulthood

Utilizing the latent classes established in the British sample, we used logistic regression to predict civic engagement in adulthood at ages 26, 30, and 34. The adult civic engagement measures varied at each age and included political involvement, voting, organizational membership, union membership, civic action (e.g., signed a petition, attended a public meeting or rally), and social trust. The low-involved class of girls and boys was selected as the reference group for analyses as described in the Plan of Analysis. All results are reported in Table 9 (top for women, bottom for men).

Women. Compared to the low-involved, the noncivic drinkers class was less likely to report high political interest ($\beta = -0.21$, $SE = 0.09$, $p < .05$) and less likely to vote ($\beta = -0.34$, $SE = 0.08$, $p < .001$) at age 30. They did not differ on political interest at age 26, organizational or union membership at age 30, or political interest, voting, civic action, or social trust at age 34.

Examining the civic drinkers class, they were more likely to report high political interest ($\beta = 0.39$, $SE = 0.14$, $p < .001$) at age 26 than those classified as low-involved. At age 30, the civic drinkers were more likely to report high political interest ($\beta = 0.38$, $SE = 0.14$, $p < .001$), and organizational ($\beta = 0.61$, $SE = 0.14$, $p < .001$) and union membership ($\beta = 0.29$, $SE = 0.14$, $p < .05$), but were not more likely to have voted in the last general election. The age 34 results indicated that the civic drinkers were more likely to report high political interest ($\beta = 0.32$, $SE = 0.14$, $p < .01$), vote ($\beta = 0.45$, $SE = 0.16$, $p < .001$), and engage in civic action ($\beta = 0.31$, $SE = 0.14$, $p < .05$), but did not differ in social trust from the low-involved.

Men. Compared to the low-involved, the noncivic drinkers class was less likely to report high political interest ($\beta = -0.25$, $SE = 0.09$, $p < .001$) or union membership ($\beta = -0.28$, $SE = 0.11$, $p < .05$) at age 30, and less likely to have high social trust ($\beta = -0.16$, $SE = 0.11$, $p < .01$) at age 34. They did not differ on political interest at age 26, voting or organizational membership at age 30, or political interest, voting, or civic action at age 34.

Examining the civic drinkers class, they were more likely to report high political interest ($\beta = 0.38$, $SE = 0.15$, $p < .001$) at age 26 compared to the low-involved. The civic drinkers were more likely to hold organizational membership ($\beta = 0.86$, $SE = 0.16$, $p < .001$) than low-involved at age 30, but did not differ on their political interest, voting, or union membership. They did not differ from the low-involved on any of the civic measures at age 34.

Discussion

The number of identified classes in the British sample differed from those observed in the U.S. sample in Study 1, but the overall impression was similar. Among girls, three classes were identified: low-involved, noncivic drinkers and civic drinkers. The same three classes were identified among boys. Results indicated that civic drinkers adolescents were more likely to be engaged civically as adults than their low-involved and noncivic drinkers counterparts, though this varied by outcome and by wave. Civic drinkers women and men were more interested in political issues, joined organizations and unions, voted, and engaged in civic action (e.g., attended a public meeting or rally). Noncivic drinkers youth were less likely to be engaged civically in adulthood than even the low-involved, suggesting that the social networks they were forming in adolescence did not inculcate values of civic participation or lead them along pathways toward later recruitment into civic involvement. They exhibited less interest in politics, did not turn out to vote, and had low social trust.

Comparison of British and U.S. Adolescents

Though the combinations of activities in Britain did not replicate the U.S. combinations, there were some similarities. Among both girls and boys (with the exception of the 1970s boys), the low-involved in the U.S. were similar to the low-involved in Britain, supporting previous research that identified a group that was uninvolved in discretionary activities (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009). British girls who were civic drinkers were similar to their U.S. counterparts who were civic drinkers in that they were well-rounded, the only difference being that they were less involved in alcohol activities. This difference may be partially explained by the age difference between the two countries. British girls were 16 years old at the time of data collection, as opposed to the U.S. samples who were predominately 18 years old; the former group may have had fewer opportunities or less desire to use alcohol. Roughly half of youth in the U.S. initiate alcohol use by age 16 (Grant & Dawson, 1997), but the current study did not measure lifetime alcohol use. Thus, girls who initiated alcohol use but did not drink alcohol in the past year would have been coded as non-drinkers, potentially affecting the class to which they were assigned. A civic drinkers group of boys who engaged in a wide range of activities was identified in both countries, consistent with previous person-centered studies that found a highly involved group of adolescents (Pancer et al., 2007; Zarrett et al., 2009). In terms of civic activities, in the U.S. we were able to identify two well-rounded groups of adolescents who both engaged in civic activities but were distinguished by their different levels of alcohol use. In Britain, only girls and boys in the civic drinkers class participated in civic activities; however, fewer girls engaged in annual alcohol use or heavy drinking than boys. These results suggest that girls in Britain may have formed different social networks through their activities that linked them into civic engagement whereas boys' social networks potentially

linked them into both civic engagement and alcohol use. For adolescents in the U.S., both of these kinds of social networks may exist for both girls and boys.

Gender Differences between British Girls and Boys

The gender differences in the combinations of discretionary activities are notable. Volunteering was part of both the girls' and boys' civic drinkers classes. Although girls tend to be involved in volunteer activities more than boys (Feinstein et al., 2005), these results indicate that there is a subgroup of boys who also value volunteering. Alternatively, boys who were likely to stay in the study may have been more likely to be involved in activities in general, including volunteering, which would be consistent with a genetic basis for involvement (Fowler et al., 2008). British girls were less active in sports and alcohol use, as suggested by their lower mean levels of participation, than British boys and these activities figured less prominently in their classes. Girls may have had fewer opportunities to engage in sports or alcohol use or valued sports or alcohol use less than boys. Though boys were more likely to be missing at age 16, girls who were busy with sports or who drank alcohol may have missed participating in the study and may have been underidentified in the results.

Predicting Civic Engagement in Adulthood

For both girls and boys, the civic drinkers class reported more civic engagement in adulthood compared to the low-involved. Such a finding is consistent with the hypothesis of an underlying process in which participation in more activities facilitates the development of more social networks that can recruit individuals into civic life in adulthood (Hanks & Eckland, 1978; Smith, 1999; Verba et al., 1995). These results are in line with previous studies that found more positive outcomes for more highly involved youth (Linver et al., 2009; Pancer et al., 2007; Zarrett et al., 2009). However, the class of civic drinkers was the only class that endorsed civic

activities which indicates that these results do not provide much additional information beyond previous work that has found that civic engagement in adolescence predicts later civic engagement (Metz & Youniss, 2005). Utilizing the U.S. data longitudinally to compare adult civic engagement differences between the civic abstainers and civic drinkers youth may better detangle the question of whether involvement in multiple activities is necessary for adult civic engagement versus just being involved in any civic activity, but longitudinal U.S. data were unavailable.

The results for the noncivic drinkers class tell a different story. At age 30, women in this class were more likely to have low political interest and less likely to vote compared even to the low-involved group. Similarly, men in this class were more likely than those in the low-involved class to have low political interest and low social trust and were less likely to be union members. It is possible that these behaviors may be related to their alcohol use in adolescence which set them on a particular developmental pathway. For example, this group may have had fewer social contacts through which to build social trust or sought out drinking instead of activities in prosocial settings (e.g., volunteering). It is possible that drinking and socializing can be a healthy combination whereby individuals build social networks, but this combination may be more developmentally appropriate for young adults as drinking is a common behavior at adult social functions: in contrast, adolescents may drink in more clandestine circumstances. Alternately, noncivic drinkers youth may have experienced growth in other areas of development that was unmeasured in the current study. For example, prior work has linked alcohol use with identity development (Dworkin, 2005), and the inherent social aspect of drinking may have provided youth with a context to explore their identities. Testing differences in these groups across other

developmental outcomes, such as health, identity, or employment, could be one fruitful avenue of research for future studies.

Sample Differences

There are several notable differences between the British and U.S. cohorts that may explain differences in combinations of discretionary activities. First, the U.S. cohorts were school year cohorts recruited when individuals were in 12th grade whereas the British cohort was a birth cohort; all individuals born during the same week were recruited and followed in subsequent years. Individuals from the U.S. cohorts who had dropped out of school prior to the 12th grade survey were not included. Whether youth who dropped out of school were more or less involved in activities is unknown, but it is likely that students who were fairly uninvolved in activities, either due to a lack of interest or because of needing to work, were more often in the dropout group. The results in Study 1, therefore, may capture a more select sample of 12th grade students who stayed in school. The British cohort was surveyed at a younger age and may have had fewer students missing due to dropping out of school. However, the age 16 survey was limited by a teachers' strike that occurred during data collection. Though the strike was a random event, a much smaller number of participants were surveyed at this wave and results may have been affected. Attrition analyses indicated that more disadvantaged individuals (e.g., parents from low social class backgrounds, mothers who smoked during pregnancy) were more likely to drop out of the study, potentially limiting the generalizability of our results.

Second, despite attempts to select measures that were as similar as possible, there were measurement differences between the two cohorts that may explain differences in the classes. For the civic engagement activities, the volunteering measure was similar for the two cohorts, but U.S. participants were asked about their civic behaviors (e.g., boycotting certain products,

working on a political campaign), whereas British participants were asked about their involvement in a political club. As the U.S. measure was a composite of five civic behaviors, it is difficult to know whether British youth were as uninvolved in civic behaviors as U.S. adolescents or whether the civic activities they were involved in were simply unmeasured. More detailed examination of any civic engagement behaviors would be helpful but additional measures were unavailable in the current study. For free time activities, British adolescents were asked about more activities and may have reported behaviors such as socializing or sports more often because they were provided with additional items to measure their involvement. For example, for sports activities only one item was asked in the U.S. survey, whereas six sports items were assessed in the British survey. Although the British survey was collapsed into categories and matched to the U.S. survey items, the British free time activities may have better captured youth involvement than the U.S. survey. Finally, for the alcohol use activities, the U.S. measure of heavy drinking asked whether adolescents consumed five or more drinks in a row in the prior two weeks, whereas the British measure queried about consuming four or more drinks in a row in the prior two weeks. The difference of one drink may be important for this age group in particular and U.S. adolescents may have had even higher rates of heavy drinking if the less stringent four or more drinks standard was used.

Third, opportunities for activity participation may have varied between the two countries. For example, volunteer service may have been more available or more valued in the U.S. as approximately 73% of U.S. girls and 62% of boys volunteered during the 1980s, but only 22% of girls and 17% of boys in Britain reported this activity. In contrast, sports participation rates in Britain were higher with 43% of girls and 66% of boys playing sports, whereas just over 33% of girls and 55% of the boys in the U.S. reported sports involvement during the same decade.

Fourth, cultural context is another possible explanation for why different classes were found in the two countries. A stronger emphasis on attending religious services could have been present in the U.S. as 55% of girls and 47% of boys endorsed involvement in religious services whereas British girls and boys reported this activity at 13% and 12%, respectively. National rates of church attendance confirm differences between the U.S. and Britain. In 1986, approximately 55% of girls and boys of U.S. adolescents attended church once a week or more (Smith, Denton, Faris, & Regnerus, 2002). Rates in Britain in 1985 were substantially lower with 10% of people in Britain attending church (rates were not available for adolescents) (WhyChurch, 2011). The results suggest that socializing may have been more important among British adolescents because three-quarters endorsed this activity. In the U.S. about half of the girls and boys socialized every day. However, five items were averaged to represent British adolescents' socializing whereas only two items were averaged to compute U.S. adolescents' socializing, possibly capturing more kinds of socializing among British youth.

Fifth, age differences may account for some of the differences observed between the samples. Slightly older adolescents may be more interested in hobbies or volunteering which were endorsed by more U.S. youth in the 1980s than British adolescents in 1986. Heavy drinking rates were higher among boys in the U.S. during the 1980s; 48% reported heavy drinking compared to 36% of British boys. Heavy drinking rates are higher among U.S. 12th graders than among 10th graders (Johnston et al., 2009). Perhaps adolescents initiate alcohol use before 16 but take a few years before developing heavy drinking (four or more drinks) habits.

Discretionary activities provide occasions for growth and development (Larson, 2001), but, without opportunities for activities or normative pressures to participate, youth may be missing out on these formative experiences. For example, opportunities for volunteering in

Britain may have been less available than in the U.S. and British youth may have missed out on the benefits of this activity, such as interacting with diverse groups of people and learning to be part of a collective group. Future research is needed to delve more closely into the opportunities and pressures for involvement in discretionary activities as the explanations offered here are speculations. More work is also needed to distinguish how much of youth's involvement in various activities is due to personal motivations to be engaged as opposed to opportunities or pressures to be engaged. Such work would help determine the types of programs that may increase adolescent involvement in discretionary activities, which will be important if youth classified by involvement in a multitude of activities have better long-term outcomes across a variety of developmental measures compared to youth who were in the low-involved or noncivic drinkers classes.

Limitations and Future Directions

As with any study there were limitations to the current analyses. First, response rates for the samples ranged from 77% to 84%. Youth who missed school the day surveys were collected were likely to differ from their counterparts in the study. For example, in the U.S., adolescents who missed school were more likely to be involved in alcohol and drug use (Johnston et al., 2009). Whether other combinations of activities would be identified among the nonresponders is unknown. Second, although an attempt was made to include diverse discretionary activities, there were many other activities not included that may be important to adolescent development. For example, peer involvement and performing arts activities may play a role in adolescents' lives but were unavailable in the current study. Third, work and work-like activities such as school and paid employment were not studied but likely include similar aspects of the studied discretionary activities such as socializing with friends, developing skills, or building social

networks that contribute to development. Understanding the skills adolescents learn in various activity and work settings as well as the transference of these skills from one setting to another would add to our understanding of adolescent development (see Zimmer-Gembeck & Mortimer, 2006 for a review). For example, adolescents who believe their work contributes to their schooling and that their schooling contributes to their work exhibit less depressive affect (Mortimer et al., 2002). Fourth, examination of the class membership probabilities indicates that the patterns of activities of some individuals were not well categorized in the study. Future studies should examine these youth in separate analyses to gain a better understanding of their combinations of discretionary activities. Finally, the motivations behind participating in discretionary activities were not examined. For example, what might explain the differences in class membership for the civic drinkers and civic abstainers classes in the U.S. data: Were civic drinkers more motivated to drink more frequently or to consume more drinks or did they have different opportunities for alcohol use than civic abstainers?

Conclusions

The strengths of our study include (a) a focus on diverse discretionary activities that have rarely been examined together and never explored through person-centered analyses, (b) the use of a nationally representative sample of 16-year-old British adolescents, (c) a cross-national comparison between Britain and the U.S., and (d) a longitudinal examination of combinations of discretionary activities predicting adult civic engagement in Britain. Examining the civic engagement, free time, and alcohol use discretionary activities from a person-oriented perspective allows for patterns of adolescent activities to be identified and described, especially subgroups of adolescents who vary from the general trend (i.e., mean-level associations of the overall sample). Three groups of adolescents were found and several similarities between Britain

and the U.S. were noted. The low-involved, noncivic drinkers, and civic drinkers classes were found in the British sample as well as in the U.S. samples, suggesting that there may be some generalizability of these classes across Western countries. The longitudinal results indicate that civic drinkers women and men were more civically engaged in adulthood compared to the low-involved, but the noncivic drinkers were less engaged. Whether these classes of youth differ on other health, work, or relationship outcomes is a potential avenue for future research.

Table 4. Attrition Analyses at Ages 16, 26, 30 and 34

	Group ^a	Age 16			Age 26			Age 30			Age 34		
		<i>n</i>	<i>M (SD)</i>	<i>t</i>	<i>n</i>	<i>M (SD)</i>	<i>t</i>	<i>n</i>	<i>M (SD)</i>	<i>t</i>	<i>n</i>	<i>M (SD)</i>	<i>t</i>
Birth (Wave 0)													
Gender ^b	0	12015	.57 (.50)	18.10*	2017	.52 (.50)	9.75*	552	.44 (.50)	2.56*	556	.44 (.50)	2.40*
	1	6682	.43 (.50)		4665	.39 (.49)		4113	.39 (.49)		3557	.38 (.49)	
Birthweight ^c	0	11016	-.05 (1.05)	-8.55*	1808	.05 (.93)	-1.84	497	.09 (.90)	-.31	512	.12 (.91)	.53
	1	6145	.08 (.91)		4337	.10 (.89)		3840	.10 (.89)		3328	.10 (.89)	
Smoked during pregnancy ^d	0	10980	.60 (.49)	5.94*	1802	.59 (.49)	4.33*	495	.56 (.50)	1.18	512	.56 (.50)	1.60
	1	6129	.55 (.50)		4327	.53 (.50)		3832	.53 (.50)		3320	.52 (.50)	
Father social class ^e	0	10001	.26 (.44)	-13.00*	1682	.29 (.45)	-7.14*	452	.37 (.48)	-.56	482	.36 (.48)	1.34
	1	5772	.36 (.48)		4090	.39 (.49)		3638	.39 (.49)		3156	.39 (.49)	
Mother social class ^e	0	6693	.62 (.48)	-10.33*	1122	.69 (.46)	-2.65*	322	.70 (.46)	-1.32	316	.70 (.48)	1.59
	1	3891	.72 (.45)		2769	.73 (.44)		2447	.74 (.44)		2131	.74 (.49)	
Mother marital status ^f	0	11035	.09 (.29)	11.64*	1808	.06 (.24)	3.02*	495	.06 (.24)	1.94	513	.06 (.23)	2.03*
	1	6144	.05 (.21)		4336	.04 (.20)		3841	.04 (.19)		3328	.03 (.18)	
Age 5 (Wave 1)													
Father social class ^e	0	6984	.31 (.46)	-11.67*	1474	.35 (.48)	-5.74*	437	.42 (.49)	-.56	437	.43 (.50)	.01
	1	5284	.41 (.49)		3810	.43 (.50)		3373	.44 (.50)		2936	.44 (.50)	
Mother social class ^e	0	2818	.44 (.50)	-4.04*	562	.43 (.50)	-3.45*	174	.52 (.50)	-.70	185	.51 (.50)	.34
	1	2018	.50 (.50)		1456	.52 (.50)		1282	.52 (.50)		1097	.53 (.50)	
Externalizing ^c	0	7489	.09 (1.04)	12.01*	1572	.00 (.98)	6.23*	458	-.11 (.93)	1.42	468	-.08 (.93)	2.84*
	1	5557	-.12 (.93)		3985	-.17 (.91)		3527	-.18 (.90)		3059	-.19 (.90)	
Internalizing ^c	0	7478	.01 (1.00)	0.70	1571	-.02 (1.02)	-0.48	457	-.01 (.98)	1.07	468	-.05 (.98)	-.98
	1	5554	-.01 (1.00)		3983	.00 (.99)		3461	.42 (.36)		3058	.00 (.98)	
Age 10 (Wave 2)													
Father social class ^e	0	6835	.34 (.48)	-12.52*	1534	.39 (.49)	-6.13*	417	.45 (.50)	-1.43	448	.44 (.50)	1.72
	1	5398	.46 (.50)		3864	.48 (.50)		3447	.49 (.50)		2999	.49 (.50)	
Mother social class ^e	0	5370	.49 (.50)	-7.65*	1160	.51 (.50)	-4.22*	334	.63 (.49)	1.64	346	.59 (.49)	-.46

Externalizing ^c	1	4167	.56 (.50)		3007	.58 (.49)		2673	.58 (.49)		2327	.58 (.49)	
	0	7630	-.09 (1.07)	-12.60*	1706	-.01 (.94)	-6.77*	469	.18 (.84)	.21	491	.04 (.99)	-3.17*
Internalizing ^c	1	5894	.12 (.89)		4188	.17 (.86)		3719	.17 (.86)		3228	.19 (.84)	
	0	7626	.00 (1.00)	-.62	1708	.01 (1.00)	0.33	469	-.02 (1.02)	-.63	492	-.02 (1.01)	-.60
Low self-esteem ^c	1	5899	.01 (1.00)		4191	.00 (1.00)		3722	.01 (.99)		3230	.01 (.99)	
	0	7224	.03 (.99)	3.54*	1585	.02 (1.01)	2.54.	431	-.02 (1.03)	.77	459	-.03 (1.00)	.57
Evidence of puberty ^g	1	5441	-.04 (1.01)		3856	-.06 (1.01)		3425	-.06 (1.00)		2966	-.07 (1.00)	
	0	7232	.14 (.35)	-5.22*	1657	.16 (.37)	-1.88	463	.18 (.38)	-.02	473	.18 (.39)	.19
	1	5749	.17 (.38)		4092	.18 (.39)		3629	.18 (.38)		3156	.18 (.38)	
Age 26 (Wave 4)													
Political interest ^h	0							552	.36 (.48)	.70	556	.38 (.49)	1.80
	1							4113	.35 (.48)		3557	.34 (.48)	
Age 30 (Wave 5)													
Political interest ^h	0										556	.35 (.48)	.01
	1										3553	.35 (.48)	
Voting ⁱ	0										555	.61 (.49)	-3.86*
	1										3552	.70 (.46)	
Org. member. ^j	0										556	.21 (.41)	-.21
	1										3556	.22 (.41)	
Union member. ^k	0										556	.19 (.39)	-3.40*
	1										3554	.25 (.44)	

^aGroup: attriters = 0, non-attriters = 1. ^bGender: female = 0, male = 1. ^cBirthweight, externalizing, internalizing, and low self-esteem were zscores. ^dSmoked during pregnancy: nonsmokers = 0, smokers = 1. ^eFather and mother social class: low social class (manual labor skilled and unskilled) = 0, high social class (professional, managerial, administrative) = 1. ^fMother marital status: married = 0, unmarried = 1. ^gEvidence of puberty: no = 0, yes = 1. ^hPolitical interest: low = 0, high = 1. ⁱVoting: no = 0, yes = 1. ^jOrg. member.: no = 0, yes = 1. ^kUnion member.: no = 0, yes = 1. * $p < .05$ or better.

Table 5. *Descriptive Statistics of Civic Engagement, Free Time, and Alcohol Use Activities for British 16-Year-Old Girls and Boys*

Latent Indicator	Code	Label	Girls Freq (Valid %)	Boys Freq (Valid %)
Civic engagement				
Volunteer ^a	1	No	2421 (77.6)	1952 (83.0)
	2	Yes	699 (22.4)	401 (17.0)
	.	Missing	675	534
Political club ^b	1	No	2893 (92.8)	2112 (90.1)
	2	Yes	226 (7.3)	232 (9.9)
	.	Missing	676	543
Free time				
Hobbies ^c	1	Low	2000 (62.6)	1676 (69.5)
	2	High	1196 (37.4)	737 (30.5)
	.	Missing	599	474
Socializing ^c	1	Low	682 (21.3)	575 (23.8)
	2	High	2517 (78.7)	1843 (76.2)
	.	Missing	596	469
Sports ^c	1	Low	1838 (57.5)	811 (33.6)
	2	High	1359 (42.5)	1603 (66.4)
	.	Missing	598	473
Religious services ^d	1	Low	3082 (86.9)	2288 (88.0)
	2	High	466 (13.1)	313 (12.0)
	.	Missing	247	286
Alcohol use				
Annual alcohol use ^e	1	No	1340 (38.1)	757 (29.5)
	2	Yes	2174 (61.9)	1810 (70.5)
	.	Missing	281	320
Heavy drinking ^f	1	No	2435 (70.0)	1628 (64.4)
	2	Yes	1046 (30.1)	900 (35.6)
	.	Missing	314	359

Note. PROC SAS requires that all latent indicators are coded as 1 or higher. At age 16, $n = 3,795$ for girls and $n = 2,887$ for boys. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bPolitical club: 0 = no political club, 1 = any political club attendance. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (more than once a week). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, past 12 months: 0 = No (no/special occasions only), 1 = Yes (once a month or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 6. *Descriptive Statistics of Civic Engagement for British 26-, 30-, and 34-Year-Old Women and Men*

	Code	Label	Women Freq (%)	Men Freq (%)
Age 26 (1996)				
Political interest	0	Low	2037 (72.0)	992 (54.1)
	1	High	794 (28.0)	842 (45.9)
	.	Missing	964	1053
Age 30 (2000)				
Political interest	0	Low	2242 (71.8)	1230 (56.0)
	1	High	882 (28.2)	966 (44.0)
	.	Missing	671	691
Voting	0	No	1004 (32.2)	769 (35.0)
	1	Yes	2116 (67.8)	1426 (65.0)
	.	Missing	675	692
Organizational membership	0	No	2426 (77.6)	1803 (82.0)
	1	Yes	700 (22.4)	395 (18.0)
	.	Missing	669	689
Union membership	0	No	2387 (76.4)	1714 (78.0)
	1	Yes	738 (23.6)	483 (22.0)
	.	Missing	670	690
Age 34 (2004)				
Political interest	0	Low	1814 (64.4)	910 (46.6)
	1	High	1005 (35.7)	1043 (53.4)
	.	Missing	976	934
Voting	0	No	934 (33.2)	634 (32.5)
	1	Yes	1880 (66.8)	1317 (67.5)
	.	Missing	1841	936
Civic action	0	No	1838 (65.0)	1324 (67.7)
	1	Yes	988 (35.0)	633 (32.3)
	.	Missing	969	930
Social trust	0	Low	634 (33.2)	507 (26.0)
	1	High	2182 (77.5)	1446 (74.0)
	.	Missing	979	934

Note. For ease of interpretation of logistic regressions, all adult civic engagement outcomes were coded as 0/1. At age 16, $n = 3,795$ for women and $n = 2,887$ for men.

Table 7. *Model Comparisons of Latent Class Analysis for British 16-Year-Old Girls and Boys*

Number of classes	G^2	df	AIC	BIC
Girls ($n = 3795$)				
2	509	238	543	649
3	341	229	393	556
4	298	220	368	586
5	225	211	313	588
6	203	202	309	640
Boys ($n = 2887$)				
2	478	238	512	613
3	326	229	378	533
4	250	220	320	529
5	196	211	287	545
6	174	202	280	640

Note. G^2 = likelihood ratio statistic; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion. Boldface font indicates the selected model.

Table 8a. *Prevalence of Latent Classes and Item-Response Probabilities for British 16-Year-Old Girls*

	Latent classes		
	Low-involved	Noncivic drinkers	Civic drinkers
Prevalence of latent classes	.44	.42	.13
Item-response probabilities			
Volunteer ^a	.16	.16	.63
Political club ^b	.03	.07	.23
Hobbies ^c	.34	.30	.69
Socializing ^c	.66	.91	.81
Sports ^c	.40	.39	.63
Religious services ^d	.11	.05	.46
Annual alcohol use ^e	.34	.97	.44
Heavy drinking ^f	.04	.63	.12

Note. The prevalence of latent classes indicates the number of girls classified in each group. Item-response probabilities indicate the proportion of individuals in that class who reported that activity. $n = 3,795$. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bPolitical club: 0 = no political club, 1 = any political club attendance. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (more than once a week). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, past 12 months: 0 = No (no/special occasions only), 1 = Yes (once a month or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 8b. *Prevalence of Latent Classes and Item-Response Probabilities for British 16-Year-Old Boys*

	Latent classes		
	Low-involved	Noncivic drinkers	Civic drinkers
Prevalence of latent classes	.42	.40	.18
Item-response probabilities			
Volunteer ^a	.07	.09	.58
Political club ^b	.02	.06	.38
Hobbies ^c	.24	.29	.51
Socializing ^c	.66	.90	.74
Sports ^c	.64	.69	.65
Religious services ^d	.12	.06	.27
Annual alcohol use ^e	.45	1.00	.67
Heavy drinking ^f	.07	.70	.27

Note. The prevalence of latent classes indicates the number of boys classified in each group. Item-response probabilities indicate the proportion of individuals in that class who reported that activity. $n = 2,887$. ^aVolunteer: 0 = no volunteer service, 1 = any volunteer service. ^bPolitical club: 0 = no political club, 1 = any political club attendance. ^cHobbies/Socializing/Sports: 0 = low participation (never to at least once a week), 1 = high participation (more than once a week). ^dReligious services: 0 = low attendance (occasionally to twice a month), 1 = high attendance (once a week or more). ^eAnnual alcohol use, past 12 months: 0 = No (no/special occasions only), 1 = Yes (once a month or more). ^fHeavy drinking, past two weeks: 0 = no heavy drinking, 1 = any heavy drinking.

Table 9. *Logistic Regression Analyses of British 16-Year-Old Girls' and Boys' Latent Classes Predicting Civic Engagement at 26-, 30-, and 34-Years Old*

Civic Engagement Activities		Noncivic drinkers		Civic drinkers	
		Estimate	SE	Estimate	SE
Women					
Age 26					
	Political interest	-0.15	0.09	0.39***	0.14
Age 30					
	Political interest	-0.21*	0.09	0.38***	0.14
	Voting	-0.34***	0.08	0.27	0.15
	Organizational membership	-0.17	0.09	0.61***	0.14
	Union membership	-0.08	0.09	0.29*	0.14
Age 34					
	Political interest	-0.12	0.08	0.32**	0.14
	Voting	-0.05	0.09	0.45***	0.16
	Civic action	0.03	0.09	0.31*	0.14
	Social trust	-0.01	0.10	0.08	0.17
Civic Engagement Activity		Noncivic drinkers		Civic drinkers	
Men		Estimate	SE	Estimate	SE
Age 26					
	Political interest	-0.10	0.10	0.38*	0.15

Age 30				
Political interest	-0.25***	0.09	0.16	0.14
Voting	0.06	0.10	0.22	0.14
Organizational membership	0.04	0.13	0.86***	0.16
Union membership	-0.28*	0.11	-0.09	0.16
Age 34				
Political interest	-0.04	0.10	0.26	0.15
Voting	0.07	0.10	0.25	0.16
Civic action	0.15	0.10	0.01	0.15
Social trust	-0.16**	0.11	-0.07	0.16

Note. Low-involved are the reference group for women and men.

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

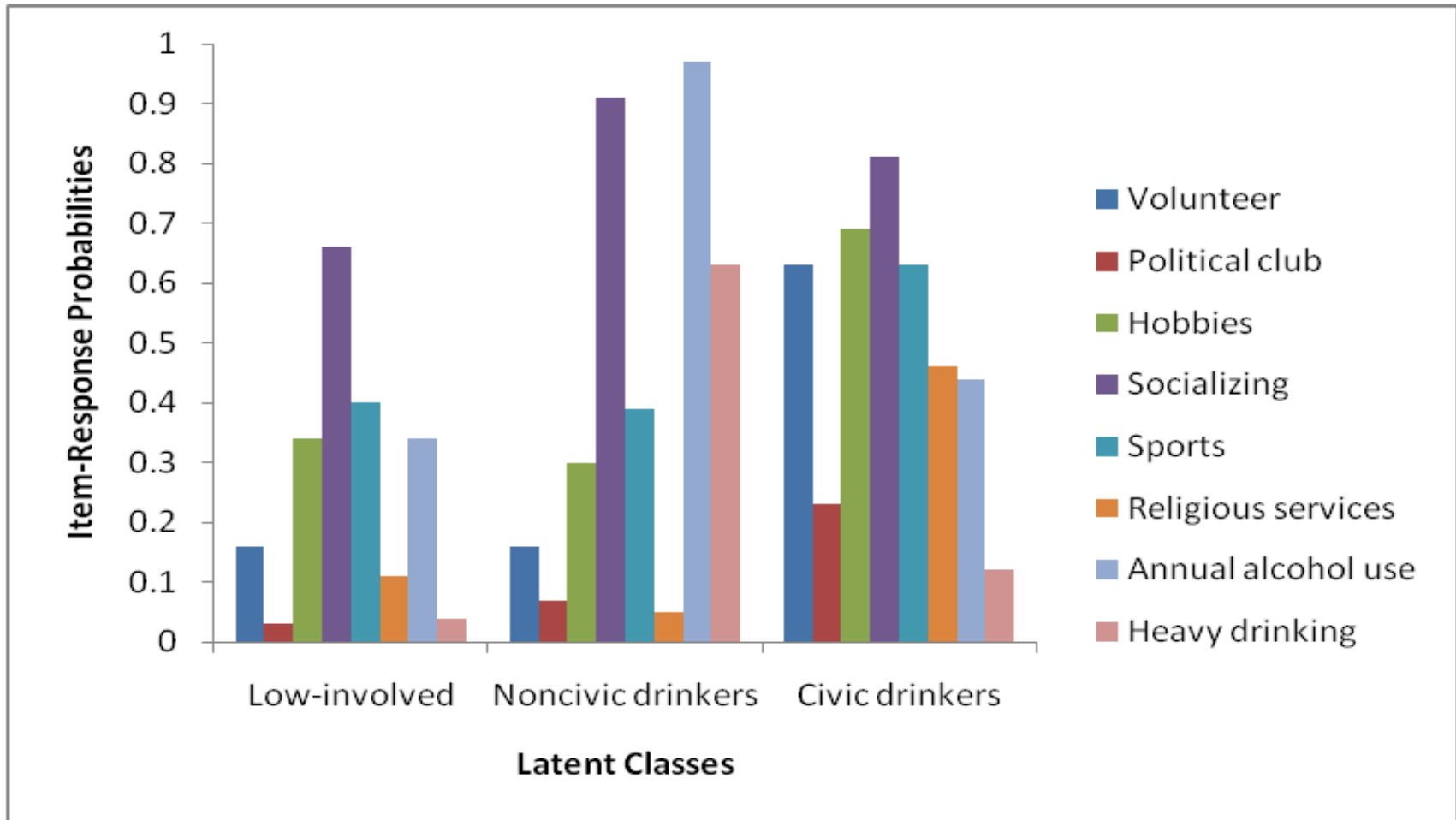


Figure 2a. *Item-Response Probabilities of Civic Engagement, Free Time, and Alcohol Use Discretionary Activities for British 16-Year-Old Girls.*

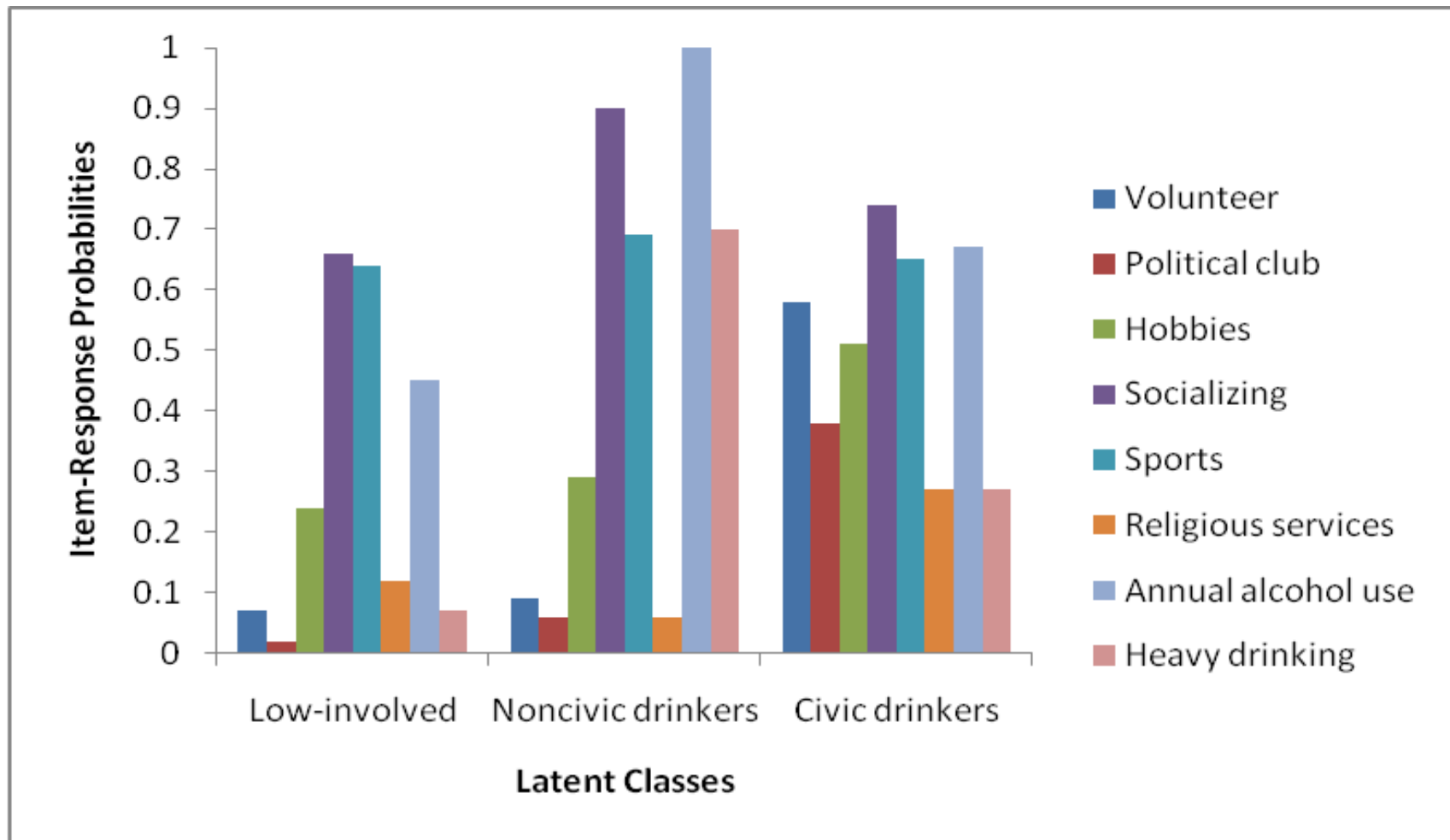


Figure 2b. *Item-Response Probabilities of Civic Engagement, Free Time, and Alcohol Use Discretionary Activities for British 16-Year-Old Boys.*

CHAPTER 4: GENERAL CONCLUSIONS

Together, the two papers in the current dissertation provide evidence that adolescents in nationally representative samples from the U.S. and Britain can be classified into a parsimonious number of distinct groups based on the combinations of discretionary activities they reported. The classifications are fairly similar across countries with low-involved (low participation in activities), noncivic drinkers (high participation in socializing and alcohol use activities), and civic drinkers (high participation in all activities relative to the other classes) classes found in both Britain and the U.S., and an additional civic abstainers (high participation in all activities except for alcohol use) class found in the U.S. The identified classes varied little across the last four decades in the U.S. samples. In the British sample, civic abstainers were more likely to participate in various adult civic behaviors compared to low-involved individuals, whereas noncivic drinkers were less likely to do so. The results extend previous studies by their focus on combinations of civic engagement, free time, and alcohol use activities, and by using the identified classes to predict adult civic engagement outcomes into the mid-30s.

Person-Centered Analyses

This work contributes uniquely to the current literature by examining the multidimensionality of adolescent discretionary activities from a person-centered approach. In brief, we used latent class analysis, a person-centered approach that classifies individuals into subgroups through their distinct constellations of behaviors (Collins & Lanza, 2010). Using various categorical variables a smaller number of basic groups are identified and individuals are assigned to their most likely latent class. Though previous studies have utilized person-centered analysis to examine civic activities (Pancer et al., 2007), volunteer and free time activities (Linver et al., 2009; Zarrett et al., 2009), and motivations for engagement in alcohol use or

leisure activities (Coffman et al., 2007; Tibbits, 2009), we were the first study to investigate the three discretionary activities of civic engagement, free time, and alcohol use activities together within the same person-centered analysis. We explicitly recognize that individuals may be involved simultaneously in a variety of activities throughout their adolescent years and that the combination of activities may influence development in both the short- and long-term and set the stage for adult civic engagement. This work shares assumptions with positive youth development (PYD) approaches that seek to foster the development of young people across several domains toward becoming competent, motivated, and compassionate adults (Larson, 2000; Roth, Brooks-Gunn, Murray, & Foster, 1998). Our results indicate that there are distinctly different subgroups of adolescents who combine developmentally promotive and developmentally risky behaviors, and that these subgroups are predictive of later civic engagement, suggesting that adolescents do translate earlier experiences into competencies that carry them into adulthood (Steinberg & Morris, 2001).

Next Steps for Our Analyses

To build on and extend the obtained results, we plan to examine concurrent and longitudinal differences between members of each class of adolescents, beyond the adult civic engagement outcomes described in Study 2. Using data collected concurrently (Study 1) or prospectively (Study 2), it would be interesting to examine demographic differences between classes such as parental education and race/ethnicity as well as differences in attitudes, academic achievement, part-time work, and other behaviors such as marijuana use or delinquency that may also help us to understand other ways youth in the latent classes differ in their development. One of the developmental tasks of adolescence is to obtain secondary education (e.g., graduate from high school); individuals who attain a high school diploma tend to enjoy better health and higher

wages than those who drop out of school (Gottschalk & Danzinger, 2005; U.S. Department of Education, 2004). If members of certain latent classes were more prone to dropping out of high school, such as the low-involved or noncivic drinkers, then programs could be designed to more effectively target these youth. As noted previously, however, high school dropouts were not included in data collection for the U.S. samples, thus suggesting the need to examine latent class of adolescent discretionary activities earlier than 12th grade. Differences in part-time work among the latent classes also warrants further investigation as many young people combine employment with education starting in adolescence (Bachman et al., 2003). Perhaps youth who were less involved in the measured activities were more often studying or working. Although both activities may compete with time available for discretionary activities, they are likely to have differential effects on achievement, substance use, and deviance (e.g., Bachman & Schulenberg, 1993).

Longitudinal analyses should expand beyond adult civic outcomes to focus on physical health measures (e.g., BMI, accidents), employment (e.g., wages, time spent unemployed), and relationships and family (e.g., marital status, number of children). For example, if the low-involved spent more of their time studying they may have done better in school and obtained better jobs than the civic drinkers. If the civic drinkers did better across a variety of outcomes, it may suggest an alternative underlying explanation such as civic drinkers being more sociable or extraverted individuals who had a proclivity for participation in a variety of discretionary activities in adolescence and in civic involvement in adulthood. Indeed, evidence suggests that there is a genetic basis to political participation (Fowler et al., 2008), though it is unclear whether these differences extend to other kinds of civic behaviors beyond voter turnout. In addition, it is

unclear whether genetics may predict why individuals chose certain activities over others and likely there are interaction effects with opportunities and social pressures for involvement.

Identity development is another important outcome that may help explain our results and should be further studied. If the identity of a civic drinker is tied to being the type of person who is actively involved in many aspects of social and cultural life; this definition of self may also explain their greater civic engagement in adulthood. In other words, they continued to be involved because civic participation became an enduring part of their identity. The noncivic drinkers may have identified more with deviant characteristics and may have disengaged from social participation if they felt like outsiders. Previous work indicates that adolescents who identified with a criminal character from a movie had the least positive adjustment in early adulthood (Barber et al., 2001). Although we cannot test identity development in the current study, future studies would benefit from examining how individuals' identities are linked with their combinations of activities.

Possible Mechanisms of Adolescent Discretionary Activities

The underlying processes thought to be associated with discretionary activities are that they create opportunities for young people to learn and practice civic skills and develop social networks with peers and positive adult role models. Adolescents may have a variety of motivations for engagement, but opportunities for participation may vary for different youth. Youth need explicit guidance to become active citizens (Damon, 2004). Some of this guidance comes from parents as they socialize their children's political development through conversations and modeling behaviors (Hyman, 1959), but discretionary activities also provide opportunities for adolescents to learn and practice civic competencies (Flanagan, 2003).

Civic skills and competencies. It has been suggested that activities provide opportunities for growth and development not necessarily found elsewhere in adolescents' lives (Larson, 2001). Exposure to different people and ideologies can build tolerance, and programs that have an explicit civic emphasis would likely be more effective at developing civic engagement among youth. Youth involved in activism projects where they were the agents of change reported a strong sense of leadership and collective problem solving (Kirshner, 2007; O'Donoghue, 2006; Watts, Abdul-Adil, & Pratt, 2002). Directly measuring skills adolescents are learning in activity settings and determining whether youth are learning any civic skills and how they best learn these skills could help influence changes to activity programs that may foster more adult civic engagement. For example, a person who learned to be part of a collective group on a sports team may want to continue being part of a collaborative crowd and may join a civic organization to feel part of a motivated group. They may realize that certain goals can only be accomplished through collective action and may be more committed to these groups (Flanagan, 2003). They may also become more civically engaged in adulthood because they want to exercise the civic skills they learned in adolescence or have developed a commitment to civic participation due to prior experiences. Finally, we should investigate whether skills learned in one activity transfer to other activities. For example, when an adolescent has collective experiences as part of a sports team, is she more likely to enjoy and seek out collaborative experiences as part of her hobbies or volunteering?

Social networks. Positive adult role models are part of the recipe for developing civic engagement among youth (Rhodes, Spencer, Keller, Liang, & Noam, 2006). Mentors provide scaffolding for youth by helping to develop their civic competencies and empowering them to politically participate (Youniss & Hart, 2005). Other activities without an explicit civic focus

may also have the potential for building relationships with adult roles models. Sports team coaches, religious leaders, and advisors for school clubs can all serve as mentors for youth. Peers, friends, and parents may also be part of the social network adolescents can build through discretionary activities. Youth may join activities to be with their friends or peers, or may be asked into activities because of friends (Hansen & Larson, 2007). Parents may factor into these social networks through encouraging, facilitating, discouraging, or forbidding youth to join activities that their friends' children do or by selecting activities for their children. Social network analysis may help answer this question by describing the various ways adolescents connect into different activities (Lauver & Little, 2005) and the social connections and skills developed during adolescence are linked with later membership in adult communities (Cote, 2002). Documenting these social networks and testing whether these networks carry into adulthood and continue to recruit individuals into civic activities would be a next step for future research.

Motivations. Adolescents may have a variety of reasons underlying why they were motivated or not motivated to be involved in specific discretionary activities. Although no information on motivations for activity selection or involvement was available in the two nationally representative data sources analyzed here, self-determination theory suggests that individuals have intrinsic and extrinsic reasons to engage in activities (Ryan & Deci, 2000). In short, when a person does something for enjoyment or interest it is considered intrinsic motivation and when a person has a separate outcome as their reasons for doing an activity it is considered extrinsic motivation. Previous research has found that enjoyment and future goals (e.g., volunteering to put on a college application) are both important motivators for adolescent involvement in activities. Adolescents were motivated to join sports and arts activities because

they enjoyed or were interested in the activity and motivation by future goals (e.g., college applications) has been linked with academic, community-oriented, and service activities (Hansen & Larson, 2007). In the current study, both civic abstainers and civic drinkers may have been motivated by future goals (e.g., college applications, parental approval) and were thus involved in a number of discretionary activities. Civic drinkers may have had higher motivation for enjoyment of alcohol use whereas civic abstainers may not think that was an enjoyable activity or perhaps did not want to risk jeopardizing the other activities they were involved with. Peer affiliation (e.g., a friend was participating) was also linked with activity involvement but was less important than enjoyment or future goals (Hansen & Larson, 2007). Future studies should examine reasons for not engaging in an activity as well reasons for engaging (e.g., Tibbits, 2009). For example, did civic abstainers avoid alcohol use because it might affect their future goals or because they did not enjoy the activity?

Opportunities for participation. Studies have shown that adolescents from low-income areas have fewer opportunities for in- and out-of-school activities (Atkins & Hart, 2003; Feldman & Matjasko, 2007). For example, some youth cannot afford the fees, equipment, or transportation required for certain activities; for others, there is a dearth of adult mentors and coaches or and of necessary facilities. Youth classified as low-involved may have had fewer opportunities to participate in the measured activities, rather than a lack of motivation to participate. Without these opportunities, youth may be less likely to develop the civic skills and competencies they need to transition to adulthood and become active members of society, thus, perpetuating the cycle of disengagement. We do not know which activities included in the present study were available to which adolescents, but future work should investigate whether

the identified combinations of activities vary by social class, family income, or school and neighborhood resources.

Future Directions and Concluding Thoughts

Adolescent development is complex and varied. Our results suggest that not only are there different types of adolescents who participate in various activities during their discretionary time, but that later adult civic outcomes can be predicted, to a degree, by adolescents' combinations of discretionary activities. Experiences in discretionary activities may have planted the seeds for later civic engagement (Flanagan, 2003), particularly activities where adolescents worked towards a collective goal or were integral members of a team. However, these results are only a starting point. Future studies should more closely uncover the various mechanisms that may account for links between adolescent activity experiences and adult civic engagement, the motivations for activity involvement, opportunities for growth and for involvement, and the variety of adult health and behavioral outcomes that may be related to adolescent activity involvement.

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Publications

Journal Articles

Finlay, A. K., Flanagan, C., & Wray-Lake, L. (in press). *Civic engagement patterns and transitions over eight years: The AmeriCorps national study*. *Developmental Psychology*.

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