Gender Differences in Occupational Aspirations and Substance Use Among Adolescents

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Abstract: Previous research has demonstrated that rates of substance use during the adolescent years are associated with school performance and teenage employment. Comparatively few studies have examined the linkages between adolescents' occupational aspirations and their rates of alcohol and drug use. Using data from a nationally representative sample of high school seniors, this study examines how adolescents' occupational aspirations may affect their patterns of substance use. Utilizing a framework of social control theory and precocious development theory, the analyses reveal that a strong association exists between the occupational aspirations and substance use rates of adolescents. Teenagers with higher aspirations report relatively lower rates of substance use. On the other hand, adolescents who aspire for occupations which involve manual labor report higher rates of substance use. Impediments to reaching desired occupations were also shown to be important, as teens who perceived that they may not reach their aspired occupation (due to financial problems, inadequate education, discrimination, etc.) were shown to be more likely to drink alcohol and use drugs. Substantial differences in these effects were shown to exist across both sex and race/ethnicity categories. Overall, the results suggest that the effects of occupational aspirations on adolescent substance use are quite intricate.

Keywords: Adolescence, aspirations, drugs, occupations, substances, work.

During the adolescent years, as teens approach the end of their high school years, most begin to formulate future goals and aspirations. For many, concern about educational and occupational goals becomes first and foremost in their lives, as thought has to be put into these choices quickly, so that decisions about college, vocational training, or other alternative forms of preparation for an adult work role can be made. Researchers have long recognized the late adolescent years as being crucial to the development of aspirations concerning adult roles (Hitlin, 2006), particularly as adolescents are undergoing so many other transitions, ranging from identity development to becoming more autonomous (e.g., Adams, *et al*., 1996; Feldman and Elliott, 1990). Within this tumultuous stage of life, adolescents do not necessarily direct themselves toward a specific career or job, but, rather, develop notions concerning the qualities of the job they eventually wish to have, along with what credentials will be necessary.

Adolescence is also a time during which many teens may engage in maladaptive behaviors, such as delinquency or substance use. In the United States, the overall rates of substance use (e.g., alcohol, marijuana) have been declining in recent years, yet the levels of usage still warrant serious concern among researchers, practitioners, and policymakers (Johnston *et al*., 2005).

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This study will examine the relationship between occupational aspirations and substance use among adolescents. Since previous studies have suggested that females and males value different traits within their occupations (Rowe and Snizek, 1995; Weisgram, *et al*., 2010), it will also seek to examine differences which may exist between female and male adolescents in regard to that relationship.

ADOLESCENT SUBSTANCE USE

Substance use among adolescents in the United States is recognized as a serious problem. During the latter part of the 1990s, adolescents' use of alcohol, marijuana, and other, harsher, substances (e.g., cocaine, inhalants, pain killers) increased steadily, while the perceived risk of use actually decreased (Johnston *et al*., 2004). More recently (since 2000), the prevalence of alcohol and illicit drug use by adolescents has been declining, yet many teenagers continue to use various substances, and the levels of problematic use remain high (Johnston *et al*., 2005).

Adolescents begin using substances, and perhaps increase their usage, for many different reasons. Family structure, such as the availability of parents, has often been cited as a factor by researchers. Adolescents from two-parent households, for example, have been shown to be less likely to use illicit drugs, as compared to adolescents from other types of families (e.g., Hoffman, 1995; Needle *et al*., 1990). Compounding the family structure issues are economic

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stressors on the family, which can make parental supervision and monitoring more difficult, and thereby increase the likelihood of substance use (Conger *et al*., 1991; Johnson *et al*., 1995). Additional family characteristics, such as family conflict, drug use by other members, and religiosity have all been associated with adolescent substance use (Bahr *et al*., 1998).

Not surprisingly, pressures brought to bear by peers to use drugs, as well as actual drug use by peers, are substantial predictors of adolescents' own substance use (Hansen, 1997). Teenagers who associate with peers who use drugs are much more likely to initiate drug use themselves (Huizinga *et al*., 1995). Changes in adolescents' interpersonal environment can often lead to substance use (Schulenberg *et al*., 1997), and peers can obviously influence substance use patterns by serving as role models, influencing attitudes about substance use, facilitating access to substances, and also encouraging substance use (Hussong and Hicks, 2003). Of course, since adolescents are selective in their peer relationships, they may tend to choose and maintain friendships with those peers who also use various substances (Bahr *et al*., 1998). Even the school environment, where most adolescent relationships are initiated, has been demonstrated to be a context in which both alcohol and marijuana use by adolescents regularly occurs, particularly as this is a context in which contacts and access to substances can take place. (Finn, 2006).

Substance use, of course, does not occur without consequences for adolescents, including a variety of psychological and behavioral problems during adolescence and early adulthood. High consumption rates of alcohol (i.e., binging) have been associated with lower rates of educational attainment (Hill *et al*., 2000), anti-social and violent behavior (Valois *et al*., 1995), driving under the influence (Escobedo *et al*., 1995), and even health problems, such as hypertension and obesity (Oesterle *et al*, 2004). Marijuana use among adolescents also presents many detrimental consequences. In a manner similar to alcohol use, high rates of marijuana usage have been associated with lower educational performance and lower expectations for success (Donovan, 1996), problems relating to other family members (Brook *et al*., 1989), a greater propensity to use harsher substances (Kandel, 2003), and a combination of physical and psychological health problems (Ferguson *et al*., 2002; Sherman *et al*., 1991). The use of harsher substances by adolescents, such as cocaine, has been linked to consequences similar to those shown among teenagers who drink heavily and smoke marijuana, and studies have demonstrated its association with delinquent and criminal behaviors (Dembo *et al*., 2007).

OCCUPATIONAL ASPIRATIONS

Occupational aspirations are a normal element within the late adolescent years. As teens approach the completion of their high school years, most begin to ponder their choices in regard to the future, and a great deal of time tends to be invested in contemplations about work and occupations. These aspirations essentially represent a means of orienting oneself towards a future goal (Schneider and Stevenson, 1999), and may serve to both motivate and direct individuals towards the goals they seek (Reynolds, *et al*., 2006). Frequently, these aspirations are rooted in the family, personal, and social contexts of the individuals (Bowe, *et al*., 2000). For adolescents, the transitional period which occurs between high school completion and establishing oneself in a particular career can be a daunting task to face, yet the development of specific aspirations can help to provide substantive direction to their efforts, and help to allay fears and concerns along the way (Chaves, *et al*., 2004). As the development of occupational aspirations proceeds during adolescence, these aspirations become very influential in the choice of careers and occupations (see Haller and Virkler, 1992) in the long term, and also begin to influence the selection of educational paths to those careers and occupations (Rojewski and Hill, 1998).

Adult status aspirations do not develop within a social vacuum; rather, a variety of factors serve as the social context in which adolescents formulate such notions. Of all of the contextual factors, it is, understandably, the family, which represents the primary arena for the development of occupational aspirations. Parents, in particular, often convey their own values and beliefs to their daughters and sons throughout the formative childhood and adolescent years, thereby leading to great similarities between the aspirations of the parents and their offspring (see Roberts and Bengston, 1999). The late adolescent years, in particular, become a period wherein parents may exert their direct influence in very tangible ways (Laramore, 1984), yet throughout the childhood years, parents regard assisting their children in their occupational choices as an essential role for themselves as parents (Young and Friesen, 1992). Parents function as role models in their own

occupations, they can provide information about the range of occupational choices, and they can facilitate their children's knowledge about a career or occupation through the parents' own peer network (Eccles, 1993). Previous studies have recognized that, even beyond direct interventions, parents can affect the occupational aspirations of their children indirectly, through such attributes as their socioeconomic status, educational attainment, or own careers and occupations (see Jodl, *et al*., 2001; Hill, *et al*., 2003).

GENDER AND OCCUPATIONAL ASPIRATIONS

Researchers have long noted that the familial context provides a strong influence upon the development of adolescent aspirations, and can affect the attitudes, beliefs, and values of children and adolescents concerning work and work roles (e.g., Kohn, 1969). However, it is also necessary to recognize that parents will, both directly and indirectly, influence the development of different types of aspirations in their daughters, as compared to their sons (Eccles, 1994). This differential treatment and differential influence on the part of parents can come about in several distinct ways. Parsons and Bales (1955) argued that parents, by virtue of their status as mothers and fathers (which are normalized positions in society) are effectively influenced by those roles, as defined and maintained by the larger society. Essentially, parents, both in their behaviors and ideologies, become more traditional, and will seek to instill those same beliefs and behaviors in their children. Hence, any prevailing gender-typing of roles - in this case, those pertaining to occupations- will become part of the socialization experiences of children. Parents may attempt to create goals for their children, yet the adolescents themselves will also develop their own, independent notions of what they wish to do with their lives; this interplay and interaction between parents and children eventually creates a degree of shared views about what will be best for the adolescent (Young *et al*., 1997).

Ultimately, the gendered nature of societal roles, and particularly occupational roles, can affect the development of aspirations by daughters and sons in a differential manner. Creamer and Laughlin (2005) have posited that the occupational views of females in late adolescence and early adulthood are often gender-typed (see also Li and Kerpelman, 2007). In their research, Creamer and Laughlin (2005) note that young women, as compared to young men, consult significant others (parents, in particular) more often, and are more readily influenced by the opinions of others. In terms of specific occupational aspirations, females have been shown to place greater value on the altruistic qualities of work (Weisgram *et al*., 2010), as compared to males. Such findings suggest that there may be a gendered quality to particular job characteristics (see Eccles, 1994), and that females and males may formulate aspirations which are more consistent with their own gender attitudes and ideologies. Males, for example, have been shown to prefer occupations which provide greater income and opportunities for power (Konrad, *et al*., 2000), whereas females are more likely to prefer occupations wherein they can assist others and/or improve their skills and knowledge (Eccles, 1994). Some researchers have suggested that, particularly in late adolescence, girls tend to espouse more prosocial values, as compared to boys (Beutel and Johnson, 2004), suggesting that a divergence of the aspirations of females and males may take place during the mid- to late adolescent years (Hitlin, 2006). Among adolescents, such gender-based differences in occupational aspirations and career preferences have consistently been shown (see Rojewski and Hill, 1998).

THEORETICAL PERSPECTIVES

Understanding how the development of educational and occupational aspirations takes place obviously requires the recognition of the complex nature of socialization itself, as the values, beliefs, ideologies, and experiences of childhood and adolescence are extremely complex and interwoven with numerous social agents and contexts. A life-course paradigm has often been utilized as a means of explaining these complex processes (see Elder, 1998). Within this perspective, the lives of parents and children are regarded as interwoven, as the developmental trajectory of each family member is linked inextricably with all others. Three particular elements within the life-course perspective are: 1) interdependent lives, 2) the timing of lives, and 3) human agency. Herein, the beliefs and attitudes concerning occupations are first conveyed and presented to children by parents, during the formative childhood years. Both as role models and as direct socialization agents, parents provide children within a 'foundation' of knowledge concerning the labor force, in general, and specific occupations within it. Understandably, the knowledge, experiences, and work characteristics of the parents come into play within this perspective (see Shu and Marini, 2008). The life course paradigm is additionally useful in understanding the developmental processes which lead to aspirations, as

it recognizes the larger social context. Both societal change (e.g., economic recession which increases unemployment rates) and individual change (e.g., receiving a failing grade in calculus in the senior year of high school) can alter the occupational aspirations of adolescents.

In regard to the occupational aspirations of females and males, the life course paradigm also recognizes that differential treatment by parents, based on the sex of the child, is both entirely possible and likely to occur. The differential influence of parents upon daughters and sons, in regards to the development of aspirations, has been noted by many researchers (e.g., Bankart *et al*., 1988; Creamer and Laughlin, 2005; Rainey and Borders, 1997). Indeed, some researchers have suggested that the core ideologies associated with gendered occupational roles are tied directly to the gendered roles within the family itself (Ridgeway and Correll, 2004). In order to better understand the role of such aspirations, this study will now examine the relative effects of occupational aspirations upon the substance use patterns among adolescent females and males.

DATA AND METHODS

Data for this study are taken from the 2010 wave of the Monitoring the Future survey (Monitoring the Future: A Continuing Study of American Youth). The sample used herein is a nationally representative sample of high school seniors, taken from approximately 130 public and private high schools throughout the U.S. Initiated in 1975, this cross-sectional survey attempts to gauge a combination of behaviors and attitudes of American adolescents. Respondents in this study are assured of the confidentiality of their answers; hence, the data used in this study are regarded as both reliable and accurate. After removing cases due to missing data, the resulting sample 1,107 female and 1,045 male adolescents.

A variety of measures are used in order to assess the substance use patterns of adolescents. Although there are certainly a wide variety of both substances and particular forms of use among adolescents, this study will concentrate of three specific types - alcohol, marijuana, and amphetamines. The availability of these substances are obviously quite disparate, in addition to their effects upon the human body, but using these three should provide a range of substance use which is representative of adolescent usage patterns. With all three of these substances, adolescents were queried as to how often, if at all, they had used the substance over the past 30 days. Responses ranged from none (0) to forty or more times (7). From these measures, a series of dummy variables were created, so as to indicate whether the respondents had ever used each of the three substances. In addition, three measures are also included which use the original 7-point scale of the questions pertaining to alcohol, marijuana, and amphetamine use.

The measurement of occupational aspirations is taken from a series of questions which asked the respondents how important particular characteristics would be to them in their employed work. The adolescents were given (on a scale comprised of 1=not important, 2=a little important, 3=pretty important, and 4=very important) twenty-two individual traits, and asked to respond how important each was to them. Based upon previous studies (see Herzog, 1982; Johnson, 2002; Marini *et al*., 1996), the responses were then used to create seven specific dimensions of work qualities - 1) extrinsic rewards, 2) intrinsic rewards, 3) altruistic rewards, 4) social rewards, 5) security, 6) influence, and 7) leisure. The measurement of extrinsic rewards resulted from questions asking if the respondent wanted a job: 1) where the chances for advancement and promotion are good, 2) which provides a chance to earn a good deal of money, 3) that most people look up to and respect, and 4) that has high status and prestige. The measurement of intrinsic rewards resulted from questions asking if the respondent wanted a job: 1) which is interesting to do, 2) which uses their skills and abilities and lets them do things they can do best, 3) where they can see the results of what they do, 4) where the skills they learn will not go out of date, 5) where they can learn new things and new skills, and 6) where they have the chance to be creative. The measurement of altruistic rewards resulted from questions asking if the respondent wanted a job: 1) that gives them the opportunity to be directly helpful to other and 2) that is worthwhile to society. The measurement of social rewards resulted from questions asking if the respondent wanted a job: 1) that gives them a chance to make friends and 2) that permits contact with a lot of people. The measurement of security resulted from questions asking if the respondent wanted a job: 1) that offers a reasonably predictable and secure future and 2) which allows them to establish roots in a community and not have to move from place to place. The measurement of influence resulted from questions asking if the respondent wanted a job: 1) where they

get a chance to participate in decision making and 2) where most problems are quite difficult and challenging. Finally, the measurement of leisure resulted from questions asking if the respondent wanted a job: 1) which leaves a lot time for other things in their life, 2) which leaves them mostly free of supervision by others, 3) where they have more than two weeks of vacation, and 4) with an easy pace that them work slowly.

Respondents were also asked about which specific type of career they hoped to have when they were 30 years of age. Responses to these questions were sorted into five categories: 1) Profession which doesn't require a doctoral degree (e.g., nurse, architect, teacher, accountant), 2) Profession which does require a doctoral degree (e.g., physician, dentist, scientist), 3) Business (e.g., office manager, restaurant owner, administrator), 4) Laborer (e.g., cook, carpenter, barber, janitor), and, 5) Protective Services (e.g., military, police, firefighter).

Respondents were also asked about their individual and household characteristics. In order to assess the desire to work, respondents were asked "If you were to get enough money to live as comfortably as you'd like for the rest of your life, would you want to work?" (coded as 1=work, 0=not work). In regard to grade performance in high school, respondents were asked to describe their average grade so far (coded with a range of 1=D through 9=A). In addition, students were asked how likely it was going to be for them to graduate with a 4-year college degree. Responses to this item ranged from 1=definitely won't, 2=probably won't, 3=probably will, to 4=definitely will. In order to assess their usage of leisure time, respondents were asked, during a typical week, how many evenings they went out for fun and recreation (responses were coded as 1=less than 1, 2=1, 3=2, 4=3, 5=4 or 5, 6=6 or 7). Since many adolescents are employed, respondents were also asked how much money they earned each week, on average. Responses ranged from 1 (none) to 10 ($176 or more).

Among the household characteristics, respondents were asked if they lived in a two-parent home (coded as 1=yes, 0=no). Given that parents can be quite influential in the development of aspirations, both directly and indirectly, the level of parental educational attainment was also asked, with the higher of the parents being used herein (coded as 1=grade school, 2=some high school, 3=high school degree, 4=some college, 5=college degree, 6=graduate degree). The respondents were also asked whether their mother was employed for most of the time during their childhood years (coded as 1=yes, 0=no). In order to measure the relative effect of community size, a dummy measure for suburban residence (coded as 1=lives in suburbs, 0=lives other than in suburbs) was included.

RESULTS

Table **1** presents the mean levels of substance use among female and male adolescents, across the three substances. As shown, higher rates of usage are reported by both sexes in regard to alcohol, followed by marijuana, and with amphetamine use being reported at the lowest levels. Among females, 64.6% reported having used alcohol in the past year, with slight more than 10% of females reporting that they drank 20 or

Table 1: Percentage Mean Levels of Substance Use among Adolescents, by Sex

	Females			Males		
	Alcohol	**Marijuana**	**Amphetamines**	**Alcohol**	**Marijuana**	**Amphetamines**
Used in past 12 months	64.6	31.9	6.7	68.0*	39.8***	8.8*
Rate of Usage						
Never	35.4	68.1	93.3	32.0	60.2	91.2
1-2 times	19.3	9.8	3.1	16.0	8.1	3.6
3-5 times	16.5	6.5	1.7	14.0	5.8	1.8
6-9 times	9.8	4.3	0.3	10.1	4.2	0.9
10-19 times	8.9	4.0	1.0	11.1	4.0	1.6
20-39 times	5.1	2.8	0.3	7.8	3.3	0.3
40+ times	5.0	4.5	0.4	9.1	14.3	0.6
N	1107			1045		

Note: Mean differences across employed status were significant beyond 0.01 for all substances; Sample is limited to high school seniors, aged 17-19.

more times within the previous year. Marijuana use among females was appreciably less, with 31.9% of females reporting that they had used marijuana, and only 7.3% having used it 20 or more times over the past year. Understandably, amphetamine use was substantially lower among females, with only 6.7% using it in the past 12 month, and less than 1% using it 20 or more times.

Male alcohol use was substantially higher than that of females, with 68% having drank alcohol over the past year, and 16.9% reporting that they drank alcohol 20 or more times during the past year. In a similar manner, marijuana use was also higher among males, with 39.8% using it over the past 12 months, and 17.6% reporting that they used it 20 or more times. Among males, the heaviest substance usage rates (40 or more times in the past year) are in terms of marijuana use, and not alcohol. Amphetamine use was also higher among males, as compared to females, with 8.8% using it over the past year.

Table **2** presents the mean levels of desired occupational characteristics, along with the specific aspired occupations. As shown, both males and females tend to place a premium on the extrinsic qualities of their future jobs. Females, as compared to males, tend to express a greater desire for job security (3.28 versus 3.19, respectively). Females similarly place a greater desire for the intrinsic job qualities, as well as the opportunity to help others in their jobs (i.e., altruism), as compared to males. Although females and

Table 2: Mean Levels of Desired Occupational Characteristics and Aspired Occupations among Adolescents, by Sex

CHARACTERISTICS	Female	Male
Extrinsic	3.19	3.21
	(0.62)	(0.62)
Security	3.28	3.19***
	(0.67)	(0.72)
Influence	2.65	2.69
	(0.71)	(0.74)
Intrinsic	3.39	3.35**
	(0.45)	(0.49)
Altruistic	3.38	3.09***
	(0.61)	(0.79)
Social	2.97	2.91*
	(0.78)	(0.79)
Leisure	2.71	2.86***
	(0.68)	(0.67)
OCCUPATIONS		
Profession w/o degree	40.74%	30.05%***
	(0.49)	(0.45)
Profession w/degree	24.57	16.75***
	(0.43)	(0.37)
Business	8.67	11.67**
	(0.28)	(0.32)
Laborer	8.13	12.73***
	(0.27)	(0.33)
Protective Services	4.88	13.40***
	(0.21)	(0.34)
N	1107	1045

Note: Significance indicates difference between means, *** p < .01, ** p < .05, * < .10; Sample is limited to high school seniors, aged 17-19.

males are similar in their desires for job which allow them to have influence over others, males do have a significantly greater desire for jobs which will allow them more opportunities for leisure, as compared to females.

In regard to the specific occupations desired by adolescents, females expressed a significantly greater desire for both professions which require a doctoral degree and professions which do not require a doctoral degree, as compared to males. When the two profession categories are combined, over 65% of females desired a profession, as compared to less than 47% of males. In terms of business careers, males were slightly more likely than females to desire a business occupation (11.67% versus 8.67%, respectively). Males also expressed a greater desire for a career in a laborer occupation, as compared to females. Finally, a rather substantial difference between the sexes was shown in regard to protective services, where over 13% of males desired such an occupation, as compared to less than 5% of females.

Table **3** presents the mean levels of individual and household characteristics among the adolescent respondents. Females expressed a substantially higher work ethic, as compared to males, and females also reported a greater desire to obtain a college degree. Females also reported a significantly higher grade performance than their male counterparts. On the other hand, males reported spending more evenings out (during their senior year of high school), as compared to females.

Table **4** presents the logistic regression models for substance use among female adolescents. As shown in Model 1 of female alcohol use, girls who expressed a greater desire for extrinsic job characteristics were significantly more likely to have used alcohol (b = .438). In addition, a significant association is shown between females' desire for social attributes in their future jobs and their use of alcohol (b = .179). Within the full model (Model 2), however, only the association between the desire for extrinsic job characteristics (b = .388) and females' alcohol use remains significant. The household and individual characteristics of females do yield several intriguing associations. Females with two parents in the home reported significantly lower probability of alcohol use, while spending more evenings out was positively associated with drinking (b

Table 3: Mean Levels of Individual and Household Characteristics among Adolescents, by Sex

	Female	Male
Work ethic	0.80	0.71***
	(0.40)	(0.45)
Two parents	0.64	0.71***
	(0.48)	(0.45)
Parental education	4.32	4.40
	(1.24)	(1.21)
Mother employed	0.70	0.67
	(0.46)	(0.47)
Grade average	6.73	6.28***
	(1.85)	(1.95)
Wants to go to college	3.55	3.31***
	(0.79)	(0.93)
# Evenings goes out/week	3.22	3.60***
	(1.33)	(1.39)
Weekly earnings ($)	4.33	4.33
	(3.49)	(3.60)
Suburban home	0.22	0.23
	(0.41)	(0.42)
N	1107	1045

Note: Significance indicates difference between means, *** p < .01, ** p < .05, * < .10; Sample is limited to high school seniors, aged 17-19.

= .357). Not surprisingly, high school grade performance and the desire for a college degree were both shown to be negatively associated with alcohol use among girls. Interestingly, a higher level of earnings by female adolescents was shown to associated with a greater likelihood of alcohol use (b = .100). This may, perhaps, be related to the ability to obtain alcohol (i.e., having enough money to purchase alcohol, even illegally).

In regard to marijuana use, girls' desire for extrinsic job attributes again appears to increase the likelihood of substance use (as shown in both Model1 and Model2). Females' desire for job security, however, is associated with a lower likelihood of marijuana use. The specific desire to become employed in a profession similarly lowers the likelihood of marijuana usage (b = -.254), but the associated is significant only within Model 1. Within the full model, both the desire for extrinsic job attributes and job security remain salient. As was the case with the models of alcohol use, though, a higher level of earnings and spending more evenings out were both associated with a higher likelihood of marijuana use by females. The two effects may, again, be related to both the ability to obtain the substance, as well as the likelihood of associating with other marijuana users.

The models for amphetamine use by females yield fewer significant associations, as compared to those for alcohol and marijuana use. In Model 1, girls' desire for jobs with a greater leisure component is shown to increase the likelihood of amphetamine use. This effect, however, is not shown to be significant within the full model. Oddly, higher levels of parental educational attainment are shown to significantly increase the probability of females' amphetamine use (b = .278). It is possible that this association is related to girls' ability to obtain amphetamines (i.e., higher-income households may be more likely to have amphetamines being legally used by the parents).

Table 4: Logistic Regression Models for Substance Use among Female Adolescents

	Alcohol		Marijuana		Amphetamines	
	Model 1	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Extrinsic	.438***	.388***	.465***	.423***	-.109	-.163
Security	-.065	-.076	-.213**	-.245**	-.054	.022
Influence	.005	.079	-.066	-.005	-.050	.055
Intrinsic	-.289	-.173	-.258	-.180	.178	.207
Altruistic	.025	.090	-.164	-.144	-.125	-.127
Social	.179*	.121	-.134	-.171	-.175	-.244
Leisure	.023	-.011	.248**	.208	.456**	.368
Profession	-.080	.040	-.254*	-.135	-.372	-.236
Work ethic		-.049		-.108		-.061
Two parents		-.283**		-.214		-.169
Parental education		.030		.092		.278**
Mother employed		.182		.038		.373
Grade average		-.183***		-.267***		-.131*
Wants to go to college		-.273***		-.029		-.288**
# Evenings out/week		.357***		.304***		.291***
Weekly earnings ($)		.100***		.091***		.043
Suburban home		.384**		.228		.259
-2 Log Likelihood	1416.582	1285.886	1352.249	1236.018	534.473	501.228
Nagelkerke R-square	.028	.178	.042	.177	.021	.096

Note: N = 1107 females; *** p<.01, ** p<.05, * p<.10; Sample is limited to high school seniors, aged 17-19.

Table **5** presents the logistic regression models for male adolescents' substance use. Similar to the effects shown in the models of girls, boys who desire extrinsic job attributes are shown to have a greater probability of alcohol use. Interestingly, the desire for job security in their future occupations is shown to substantially decrease male adolescents' likelihood of alcohol use (b = -.267 in Model 1). As compared to girls, boys with a stronger desire to work are shown to have a lower likelihood of drinking (b = -.437 in Model 2). However, unlike the effects shown in the girls' models, no significant association is shown between the desire to obtain a college degree and male adolescents' probability of drinking. Clearly, there are several distinct effects shown in the models of girls and boys.

In terms of the likelihood of marijuana use, male adolescents who desire extrinsic job characteristics are shown to have a greater probability of marijuana use. It is worth noting, however, that the desire for influence in the future occupations is associated with a lower likelihood of marijuana use among males (b = -.249 in Model 2). Contrary to this finding, boys' desire for jobs with more social attributes is associated with a greater likelihood of marijuana use (b = .301 in Model 2). The work ethic of males appears to again temper substance use, as a strong desire to work is associated with a lower chance of marijuana use among adolescent males (b = -.524). This effect was not significant among adolescent girls. Among boys, the presence of two parents, along with a higher grade performance in school, appears to significantly lower the probability of marijuana use. Nonetheless, spending more evenings out, as well as having higher earnings, actually increase the likelihood of marijuana use. The desire for a professional career is similarly shown to significantly decrease the chance of marijuana use among males (b = -.320 in Model 1).

Adolescent males' use of amphetamines is significantly associated with both the desire for intrinsic and altruistic job characteristics. Among males, a greater desire for intrinsic job attributes actually increases the likelihood of amphetamine use, while the desire for altruistic job attributes appears to lower the chance of such use. Within the full model (Model 2), the presence of two parents again appears to lower boys' substance use. In a manner similar to that shown

Table 5: Logistic Regression Models for Substance Use among Male Adolescents

	Alcohol		Marijuana		Amphetamines	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Extrinsic	.415***	.334***	.256**	.226*	.035	-.033
Security	-.267**	-.214*	-.239**	-.181	-.253	-.108
Influence	-.073	.001	-.298***	-.249**	-.219	-.200
Intrinsic	.045	.083	-.027	-.023	.510*	.518*
Altruistic	-.069	-.039	-.196*	-.111	-.381**	-.296*
Social	.001	-.016	.286***	.301***	.287	.243
Leisure	.003	-.097	.097	-.058	.245	.096
Profession	-.211	.016	-.320***	-.003	-.390*	-.105
Work ethic		-.437***		-.524***		-.337
Two parents		-.265*		-.352**		-.553**
Parental education		-.001		.076		.274**
Mother employed		-.105		-.165		-.044
Grade average		-.151***		-.233***		-.089
Wants to go to college		-.033		-.135		-.230*
# Evenings out/week		.285***		.308***		.472***
Weekly earnings ($)		.085***		.054***		.062**
Suburban home		.315*		.386**		.314
-2 Log Likelihood	1291.389	1208.215	1369.441	1246.636	605.758	547.719
Nagelkerke R-square	.024	.129	.045	.190	.036	.154

Note: N = 1045 males; *** p<.01, ** p<.05, * p<.10; Sample is limited to high school seniors, aged 17-19.

among girls, a higher level of parental educational attainment is shown to increase boys' use of amphetamines. Again, this may result from the income effect associated with parental educational attainment. Undeniably, though, the more evenings which boys spend out appears to have a strong impact upon amphetamine use (b = .472). For both boys and girls, greater exposure to peers (and, thereby, less time spent with parents) may result in more opportunities to both obtain and use various substances.

Table **6** presents the ordinary least squares regression models of substance use among adolescent females. In terms of alcohol use, the desire for more extrinsic job attributes is associated with higher rates of drinking among girls (b = .408 in Model 2). However,

Table 6: Ordinary Least Squares Regression Models for Substance Use among Female Adolescents

	Alcohol		Marijuana		Amphetamines	
	Model 1	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Extrinsic	.459***	.408***	.271***	.212**	.018	.017
	(.158)	(.140)	(.099)	(.078)	(.016)	(.015)
Security	-.085	-.081	-.087	-.086	-.048	-.041
	(-.032)	(-.030)	(-.035)	(-.034)	(-.047)	(-.041)
Influence	-.018	.036	-.010	.035	.006	.020
	(-.007)	(.014)	(-.004)	(.015)	(.006)	(.020)
Intrinsic	-.412***	-.283**	-.225	-.120	-.007	.002
	(-.103)	(-.071)	(-.060)	(-.032)	(-.005)	(.001)
Altruistic	-.208**	-.169*	-.148	-.106	-.027	-.015
	(-.071)	(-.058)	(-.054)	(-.039)	(-.025)	(-.014)
Social	.140*	.043	-.169**	-.215***	-.030	-.039
	(.061)	(.019)	(-.078)	(-.100)	(-.034)	(-.045)
Leisure	.093	.048	.199**	.140	.090**	.073**
	(.035)	(.018)	(.080)	(.057)	(.091)	(.074)
Profession	-.151	-.096	-.285***	-.190*	-.016	.005
	(-.040)	(-.025)	(-.080)	(-.054)	(-.012)	(.004)
Work ethic		-.149		-.105		-.021
		(-.033)		(-.025)		(-.012)
Two parents		-.103		-.115		-.031
		(-.027)		(-.033)		(-.022)
Parental education		.101**		.075*		.052***
		(.070)		(.055)		(.095)
Mother employed		-.013		-.026		.001
		(-.003)		(-.007)		(.000)
Grade average		-.106***		-.175***		-.021*
		(-.109)		(-.192)		(-.058)
Wants to go to college		-.158**		-.097		-.087***
		(-.069)		(-.046)		(-.101)
# Evenings out/week		.337***		.279***		.051***
		(.250)		(.221)		(.101)
Weekly earnings ($)		.089***		.066***		.007
		(.173)		(.136)		(.035)
Suburban home		.299**		.147		.022
		(.069)		(.036)		(.013)
F	15.057***	12.889***	4.971**	11.872***	1.297	2.970***
R-square	.034	.168	.035	.156	.009	.044

Note: N = 1107 females; *** p<.01, ** p<.05, * p<.10; Sample is limited to high school seniors, aged 17-19; standardized coefficients shown in parentheses.

girls' aspirations for intrinsic job qualities appears to lower rates of alcohol use (b = -.283 in Model 2). In addition, the desire for altruistic job characteristics (i.e., being able to help others) is also negatively associated with alcohol use among female adolescents. Household and individual characteristics also exert a significant influence, as both higher grades and the desire to obtain a college degree are both negatively associated with alcohol use. As shown in the logistic models, though, spending more evenings out and having higher earnings both appear to increase drinking rates among girls.

The desire for extrinsic job attributes is also positively associated with marijuana usage among girls (b = .212 in Model 2). This effect, however, is tempered by the associations shown by the desire for social attributes and the desire for a professional career, which are both negatively associated with marijuana use among females. As shown in the model for alcohol use, girls' high school grades are negatively associated with marijuana usage (b = -.175 in Model 2). Once again, though, spending more evenings out and having higher earnings appear to be associated with higher usage rates in regard to marijuana. The models of amphetamine use, by comparison, yield relatively weak results (though this is partially attributable to the lower overall usage rates of amphetamines). It is worth noting that girls' desire for leisure job characteristics is associated with a greater usage rate of amphetamines (b = .073 in Model 2). Interestingly, parental educational attainment also yields a positive association with girls' use of amphetamines (b = .052). This may again reflect a household income effect upon adolescent substance use, rather than a parental education effect, per se.

Table **7** presents the ordinary least squares regression models for substance use among male adolescents. In terms of alcohol usage, higher desire for extrinsic job attributes are strongly associated with higher rates of drinking by boys (b = .367 in Model 2). However, boys' drinking rates are tempered by the influence of the desire for job security, which is negatively associated with alcohol consumption (b = -.219 in Model 2). Alcohol usage by male adolescents is meagerly influenced by their desire for jobs with a social set of attributes, but this effect is rather weak. It is quite clear, though, that an increase in evenings spent out of the home, along with higher weekly earnings, serve to increase alcohol consumption by male adolescents.

Boys' use of marijuana is shown to be negatively associated with their desire for altruistic job attributes (b = -.215), suggesting that male adolescents who aspire to help others may use marijuana at significantly lower rates. The desire for a professional career also yields a significant negative association with marijuana use, but the association is not significant within the full model (Model 2). Boys' use of marijuana is significantly lower when coupled with a strong desire to work (b = -.467) and the presence of two parents in the home (b = -.432). The desire to obtain a college degree, along with higher school grades also appear to lower rates of marijuana use among male adolescents. Once again, though, spending more evenings out of the home (b = .411) and having a higher level of earnings (b = .055) both appear to increase marijuana consumption by males.

Finally, the desire for altruistic job attributes are negatively associated with amphetamine usage rates among male adolescents (b = -.115 in Model 2). As was shown in the models of marijuana usage, it seems as though the desire to have an occupation which allows males to help others actually serves to lessen substance use. The strongest effect within the model, though, is again shown by the number of evenings spent outside the home, which is positively associated with amphetamine use by boys.

CONCLUSIONS AND DISCUSSION

This study sought to examine the relationship between the occupational aspirations of adolescents and their substance use patterns. In addition, the analyses were designed to clarify what, if any, differences existed in these associations between females and males. The analyses clearly demonstrate that adolescents' aspirations for specific job attributes have a salient and meaningful relationship with their overall use of various substances. Female and male adolescents, though, have considerable differences in terms of how such occupational aspirations are associated with alcohol, marijuana, and amphetamine use.

As compared to girls, boys were clearly more likely to have tried and used various substances during their senior year of high school. No matter which substance was being considered –alcohol, marijuana, or amphetamines – males were much more likely to have tried these, and to report higher rates of usage than their female counterparts. Indeed, the patterns are rather alarming when put into perspective: among all

Table 7: Ordinary Least Squares Regression Models for Substance Use among Male Adolescents

	Alcohol		Marijuana		Amphetamines	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Extrinsic	.474***	.367***	.129	.031	.051	.023
	(.145)	(.112)	(.036)	(.009)	(.038)	(.018)
Security	-.295***	-.219**	-.196*	-.097	-.063	-.041
	(-.105)	(-.078)	(-.063)	(-.031)	(-.056)	(-.036)
Influence	-.082	-.023	-.168	-.077	-.046	-.030
	(-.030)	(-.008)	(-.055)	(-.025)	(-.042)	(-.027)
Intrinsic	-.188	-.186	.117	.111	.098	.112
	(-.046)	(-.045)	(.026)	(.024)	(.059)	(.067)
Altruistic	-.139	-.099	-.328***	-.215**	-.123***	-.115***
	(-.054)	(-.039)	(-.115)	(-.076)	(-.118)	(-.110)
Social	.212**	.168*	.176	.148	.073*	.064
	(.083)	(.066)	(.062)	(.052)	(.071)	(.062)
Leisure	.059	-.006	.178	.018	.056	.033
	(.019)	(-.002)	(.054)	(.005)	(.046)	(.027)
Profession	-.313**	-.022	-.392***	.024	-.063	-.002
	(-.077)	(-.005)	(-.087)	(.005)	(-.038)	(-.001)
Work ethic		-.240*		-.467***		-.068
		(-.054)		(-.094)		(-.038)
Two parents		-.251*		-.432***		-.056
		(-.056)		(-.087)		(-.031)
Parental education		.044		.077		.033
		(.026)		(.042)		(.048)
Mother employed		-.186		-.127		-.006
		(-.043)		(-.027)		(-.004)
Grade average		-.124***		-.211***		-.031**
		(-.119)		(-.183)		(-.073)
Wants to go to college		-.053		-.235***		-.034
		(-.024)		(-.097)		(-.038)
# Evenings out/week		.372***		.411***		.093***
		(.254)		(.254)		(.155)
Weekly earnings ($)		.094***		.055***		.017**
		(.167)		(.089)		(.073)
Suburban home		.043		.393**		.132**
		(.009)		(.074)		(.068)
F	4.940***	11.214***	3.832***	13.100***	2.530***	4.330***
R-square	.037	.157	.029	.178	.019	.067

Note: N = 1045 males; *** p<.01, ** p<.05, * p<.10; Sample is limited to high school seniors, aged 17-19; standardized coefficients shown in parentheses.

adolescents, approximately 2 out of 3 had drank alcohol, 1 out of 3 had used marijuana, and 1 out of 13 had used amphetamines. While it was not entirely surprising to find that males reported higher rates of substance use, it was noteworthy that the rates of substance use by females were actually shown to be

quite comparable. Although the overall male and female rates of having tried substances were similar, it was also quite clear that males still used the various substances at significantly higher rates. This was particularly true in regard to marijuana use, where 17.6% of the boys reported having used marijuana 20 or more times over the past year. These patterns provide clear evidence that adolescent substance use is quite prevalent. Central to this study, though, was the issue of how such substance use patterns might be affected by adolescents' occupational aspirations.

The multivariate analyses clearly demonstrate that adolescents' occupational aspirations have substantial associations with teen substance use. In particular, adolescent females and males who aspired to have jobs with extrinsic attributes were shown to be both more likely to drink alcohol and to drink at higher rates. Males, however, were significantly less likely to use alcohol and to drink less overall when they expressed desires for job security in their future occupations. Seemingly, teenage boys may recognize the need to exercise more maturity in their behavior in order to have a long-lasting and secure employment in their adult years. It is worth noting that this same association was not shown to be significant among females. However, female adolescents appeared to be less likely to drink alcohol when they expressed desires for jobs with intrinsic attributes. Hence, there may be some support here for the stereotyped notion that females are more concerned about intrinsic job attributes, as compared to males.

The regression models of marijuana use yielded several intriguing patterns. As with alcohol use, females who expressed a desire for extrinsic job attributes were shown to be more likely to use marijuana, and to use it at higher rates. Those females who desired jobs with social attributes, though, were shown to be less likely to use marijuana. Among males, those who aspired for altruistic characteristics in their future jobs were substantially less likely to have used marijuana, and tended to use it at lower rates. Those males who aspired to jobs which would allow them to exercise influence, however, were shown to use marijuana at significantly lower rates. This may again be related to males' concerns about stability and job security, as the risk of being caught using marijuana may be considered by adolescents to be more dangerous to their career plans, as compared to alcohol use.

Males' desire for jobs with altruistic attributes was also shown to be negatively associated with amphetamine use. Although traditional gender stereotypes might suggest that females' concerns about opportunities to help others (altruism) would outweigh those of males, it would appear that this particular occupational aspiration affects adolescent boys much more than girls. Teenage girls who aspired to have jobs which afforded them more opportunities for leisure were shown to be more likely to have used amphetamines, and to use them at higher rates.

While it was clear that occupational aspirations do have meaningful associations with adolescents' substance use patterns, their respective household and individual characteristics also affected substance use rates. This was especially true in regard to the influence of spending evenings out with friends, along with having higher levels of earnings. If it is assumed that the majority of substance use among adolescents takes place within a social arena (e.g., drinking with friends, instead of drinking alone), it is logical to also assume that teens who spend more evenings out with their friends are going to find themselves in situations where substance use is more likely to occur. In addition, having higher earnings would provide teens with the means to purchase various substances, and thereby increase the likelihood of their usage. In accordance with the life-course paradigm, it appears that the adoption of specific occupational and career aspirations during adolescence has salient bearing upon the substance use by teens.

Overall, these analyses presented a rather distressing picture of adolescent occupational aspirations and their effects upon substance use. These results provide some support to the contention of precocious development theory, as a focus upon the more self-gratifying job attributes, such as the extrinsic, social, and leisure dimensions of future jobs, appear to be associated with greater usage of various substances during the teen years. Of course, it is necessary to recognize the reciprocal nature of these effects, as it is quite plausible that substance use patterns, and particularly higher usage of the different substances, may have meaningful effects upon adolescents' career plans and goals. Undoubtedly, future research needs to address the intricate and potentially interwoven nature of these relationships. During the various developmental and maturational changes which occur during the adolescent years, the early steps into both adult roles (e.g., setting occupational goals) and adult behaviors (e.g., substance use) will likely create synergetic effects for many adolescents, and potentially make dealing with

occupational aspirations and substance use choices much more challenging.

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